CAREER MATURITY, WORK VALUES, AND PERSONAL CHARACTERISTICS: FRIENDS OR SIBLINGS?

BY

BEVERLY BROWN CRANE

A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL
OF THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1977

To My Precious Children,

Cheryl, Keith, and Marc--

who have given much love,
encouragement, and support in
their own uniquely individual ways.

ACKNOWLEDGEMENTS

If the words of Lennon and McCartney could be paraphrased to read, "I get by with a lot of help from my friends," they would be extremely apropos in relation to this dissertation, for the final product is a result of the concerted efforts of many very fine individuals.

Much love and gratitude is expressed to my three children, to whom this dissertation is dedicated, for their cooperation, support, and love returned. They have made innumerable sacrifices and are to be commended for their patience and understanding.

All doctoral candidates have a chairperson; few are fortunate enough to have one who is as capable, supportive, and helpful as Larry Loesch. It is with much sincere appreciation and caring that this acknowledgement is made. Larry's actions have been too numerous to describe; suffice it to say that I could not have had a more excellent chairperson and friend.

Sincere appreciation is expressed also to Drs. Harold Riker and Harry Grater, who both in their own particular ways have been very helpful.

Words cannot express the gratitude I feel to an individual who has not only offered warmth and kindness, but who also has been a source of support and personal insight. To Milan Kolarik, I offer a very special, "Thank you."

There is one person, who for over a year has patiently listened, almost daily, to my moanings and groanings--first about qualifying exams

and then about this dissertation. Her caring, support, and encouragement have been invaluable. Much love and appreciation is expressed to my good friend and working companion at the Graduate School, Judy Harris.

Without the most able assistance, great patience, and reassuring statement, "Just wait, I'll tell you when to panic," of Barbara Rucker, the computer programming and statistical analyses for this study would still be in the coding stage. A big bouquet goes to her.

What would I have done without the levity of Assistant Graduate School Dean John Newell, who, throughout this entire process, has so often helped me see the humorous side. He always had time to listen and offer helpful suggestions and support. Much appreciation is expressed to him.

Many thanks are expressed to Jimmy C. Perkins for her support, understanding, and cooperation during the time I worked under her at the Graduate School.

Terry DiNuzzo has been a source of strength and support. Her firm declaration, "Bev, we're gonna make it!" will always be remembered.

To my typists, Jo Ann Salter, Dorothy Long, and Susan Stebbins goes much appreciation for their excellent work and untiring efforts.

Additional thanks goes to Jean Holzer, of CIRCA, who was so extremely helpful in the programming of the data for transfer from tape to disk.

Many others have made their own special contributions to the success of this endeavor. Gary Seiler did a marvelous job of chairing my proposal seminar. Jim Morgan was so helpful in teaching me how to reduce my "anxiety about my anxiety" through the use of self-hypnosis.

To these two friends along with Cindy Cumming, Joey Pelham, Linda Thompson, Jim Sampson, and Bill Ware go much appreciation. Additionally, there are those friends who have been in the background, who for so long have had faith in me. To Claire Walsh, Susie Todd and Peggy Flagg, I express much love.

Finally, appreciation is expressed to the faculty members and student-subjects who were so cooperative in making this study possible.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
ABSTRACT	viii
CHAPTER I. INTRODUCTION	1
Purpose of the Study	4
Rationale for the Study	4
Definition of Terms	8
Outline of the Remainder of the Study	8
CHAPTER II, REVIEW OF THE RELATED LITERATURE	10
Super's Career Development Theory	10
Vocational Life Stages	13
Career Maturity	16
The Importance of Career Maturity	18
Measurement of Career Maturity	21
Career Maturity and Personal Characteristics	23
Work Values	29
Work Values and Career Development Theory	30
Measurement of Work Values	31
Work Values and Personal Characteristics	35
Career Maturity and Work Values	37
Summary	41
CHAPTER III, RESEARCH METHODOLOGY	44
The Research Approach and Hypotheses	45
Instrumentation	46
The Adult Vocational Maturity Inventory	46
The Work Values Inventory	47
The Sampling Procedure	50
Data Collection	52
Data Analysis	53
Limitations	54

Page

CHAPTER IV, RESULTS OF THE STUDY 55

The Sample 55
Results Related to the Null Hypotheses 57
Differences in Career Maturity 57
Differences in Work Values 61
Relationships Between Career Maturity and Work Values 79
Relationships Between Age and Work Values 85
Relationships Between Age and Career Maturity 86

CHAPTER V, DISCUSSION AND CONCLUSIONS 90

Introduction 90
Summary of the Results 91
Discussion and Conclusions 94
Implications 96

APPENDICES

A COVER LETTER 98

B INTRODUCTION OF THE RESEARCH AND ADMINISTRATIVE INSTRUCTIONS 99

C AVMI OPINION SURVEY 101

D INTERPRETATION OF WORK VALUES INVENTORY SCALES 104

E FREQUENCY OF RESPONDENTS BROKEN-DOWN BY COLLEGE BY SEX 106

REFERENCES 107

BIOGRAPHICAL SKETCH 113

Abstract of Dissertation Presented to the Graduate Council
of the University of Florida in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

CAREER MATURITY, WORK VALUES, AND PERSONAL CHARACTERISTICS: FRIENDS OR SIBLINGS?

By

Beverly Brown Crane

August 1977

Chairman: Larry C. Loesch
Major Department: Counselor Education

In recent years the concept of career counseling has become more complex due to the numerous factors which underlie the career decision making process. Many counselee characteristics must be taken into consideration for career counseling to be effective. The work of Donald Super has placed emphasis upon two of these characteristics: career maturity and work values. Information regarding the client's level of career maturity facilitates the assessment of the client's readiness to make appropriate vocational decisions. An understanding of the client's value orientation assists the counselor in facilitating the direction of these decisions.

The theoretical framework of this study was the career development theory of Donald Super. The purpose of this study was to examine the constructs of career maturity and work values in relation to university students, who are in the Exploratory Stage of development. More specifically, this study sought (1) to examine the differences in career

maturity and work values on the basis of sex, academic level, and for all levels combined, and (2) to explore the relationships of career maturity, work values, and age across academic levels and for all academic levels combined.

The sample consisted of 448 undergraduate students from five colleges who were enrolled during the Spring and Summer Quarters, 1977, at the University of Florida. Of this number there were 136 freshmen, 61 sophomores, 72 juniors, and 179 seniors. The mean ages across academic levels ranged from 19.0 to 22.95, with a mean age for the total sample of 21.19. The sample was composed of 51.8% males and 48.2% females.

The Adult Vocational Maturity Inventory (AVMI) and the Work Values Inventory (WVI) were used to assess the two main criterion variables. Additionally, demographic data as to age and sex were obtained. Results indicated no significant differences in the degree of career maturity across academic levels. A significant difference in career maturity on the basis of sex was determined, with college females being significantly more career mature than college males. Significant differences across academic levels were found for only four of the WVI scales. Significant differences between males and females were determined for six of the WVI scales; in each case females scored significantly higher than males.

For university students as a group, significant relationships were found between career maturity and 12 of the WVI scales. When evaluated across academic levels significant relationships were found for 32 of the 60 correlations.

Correlations between age and work values of university students as a group yielded a significant relationship with only one of the WVI scales. Correlations between age and work values of university students across academic levels yielded only two significant relationships.

No significant correlations were found between age and career maturity for either university students as a group or across academic levels.

A principal-axis factor analysis with varimax rotation was computed to determine the factors underlying the two main criterion variable constructs. Although four factors emerged, the factor structure was generally unclear as many of the scales loaded heavily on more than one factor.

Results of the study led to several conclusions.

1. Further support for Super's developmental-sequential-life stage theory was established, particularly in relation to the Exploratory Stage of development.

2. Although some significant correlations were found between career maturity and work values for university students, there is a limitation as to the meaning of these due to the results of a principal-axis factor analysis.

3. University females are more career mature than university males.

Discussion of the results, implications for theory, counselor training and practice, and further research are presented.

CHAPTER I

INTRODUCTION

Career development theorists and practitioners have, in recent years, noted that effective career counseling necessitates that the counselor be aware of a wide variety of counselee characteristics. Early vocational guidance techniques focused on counselee interests and aptitudes. However, modern career counseling incorporates numerous other counselee characteristics such as self-concept (Super, Starishevsky, Matlin, & Jordaan, 1963), needs (Roe, 1957), values (Ginzberg, 1970), career maturity (Crites, 1961), or personality types (Holland, 1973). The relative emphasis given to each of these types of characteristics are dependent on the biases of the respective theorists. Suffice it to say that career counseling is becoming increasingly more complex as more and more personal characteristics are explored in terms of their relevance to career development. Substantive research on these characteristics must be conducted if practice is to keep pace with theory.

Two personal characteristics, career maturity and work values, have received prominence primarily because of the work of Donald Super. He theorizes career maturity to emerge at any age and views it as "planfulness or time perspective, exploratory attitudes and behaviors, the acquisition of information, knowledge of decision making, and reality orientation (a late maturing aspect of career maturity including self and situation)" (Super, 1974, p. 5). Knowledge of career maturity is

important because it allows the counselor to assess the individual's readiness to make appropriate vocational decisions. Furthermore, this knowledge allows the counselor to use the most appropriate counseling interventions.

Work values, according to Super (1970), are those satisfactions which are intrinsic in as well as those which are extrinsic to work; the satisfactions which one seeks in a work experience as well as those which may be the outcomes of that experience. The counselee's work values limit and focus the vocational directions the client is presumably willing to follow. They also have implications for the nature of the career counseling or guidance process.

In addition to Super, a number of other authors have stated the importance of each of these characteristics within the context of career development and counseling (Crites, 1961; Ginzberg, Ginzberg, Axelrad, & Herma, 1951; Tiedeman & Ohara, 1963; Zytowski, 1970). Moreover, most of them have cited the need for additional research on both constructs. These recommendations give rise to still another research need--the investigation of the relationships among career maturity and work values. Given that both of these constructs are emphasized within Super's theory of career development, it is highly unlikely that they are independent. Unfortunately, initial investigations aimed at clarifying the relationships between these two constructs have produced conflicting and often contradictory results (Blai, 1974; Kinnane & Pable, 1962; Wagman, 1968; Wolfe, 1969).

Research which offers additional information about the development of career maturity and work values and the relationships among

these constructs and personal characteristic variables has significant implications for career guidance, education, counseling, and placement as well as counselor education and outreach programs. If they are to be of assistance in personal counseling and in the development of career guidance, education, and outreach programs, career counselors and counselor educators need to understand the developmental stages and related tasks of those with whom they work. They also need to know the importance and functions of work values in the lives of these individuals. Finally, they need to be aware of how career maturity and work values are related. With this knowledge, counseling strategies and programs can be developed which assist clients in understanding these relationships, which help develop yet unmastered tasks, and which aid in clarifying personal work values, thus aiding the client in the vocational decision making process.

Research which furthers current knowledge about career maturity and work values is particularly needed when there is a paucity of information about the related attitudes, readiness, and coping behaviors of a specific population. Such a population is university students. It would seem that with the current trend toward universal higher education and the apparent need of and pressure upon university students to make career decisions, more data would be available about this particular stage in the career pattern. Unfortunately, comparatively little has been written and even less investigated about the constructs of career maturity, work values, and variables which may have effects upon these constructs within the university student population.

Purpose of the Study

The purpose of this study was to explore the differences and relationships among the career maturity, work values, and personal characteristics of college students. More specifically, this study examined the developmental differences in career maturity and the orientations of work values across academic level classifications and between sexes of university students. It also investigated the relationships among career maturity, work values and age.

Rationale for the Study

The theoretical framework for this study was the career development theory of Donald E. Super. Super (1969a) labels his orientation an approach which he describes as "differential-development-social-phenomenological psychology" (p. 9). This approach emphasizes four major components: career patterns, translating the self-concept into a vocational self-concept, vocational life stages, and vocational maturity (Tolbert, 1974). The latter two elements, vocational life stages and career maturity, are the ones upon which this particular study focused.

In Super's developmental theory, career choice is viewed as an ongoing process from birth to old age, as opposed to a single decision making event (Super, 1957). He proposes that an individual progresses from one sequential life stage into the next, mastering certain necessary tasks at each stage. Although the stages basically correspond with chronological age, they vary from person to person and are used more as a generalized classification system rather than an exact indicator of the stage into which individuals of a particular age group will

fall. Based upon his research, Super delineates the sequential life stages as (1) the Growth stage, birth to age 14; (2) the Exploratory stage, ages 15-24; (3) the Establishment stage, ages 25-45; (4) the Maintenance stage, ages 45-65; and (5) the Decline stage, beginning about age 65 (Super, 1957). Two of these stages (2 & 3) are particularly pertinent to university students.

The stages of Exploration and Establishment, ages 15-45, are the ones during which significant developmental impact occurs. The Exploration stage is characterized by examination of the self: needs, interests, capacities, opportunities, and values. Both attitudinal and cognitive aspects of the career decision making process are developing. During the Establishment stage the process is continued as the attitudinal and cognitive factors develop further and a career choice is either tentatively or permanently made (Super, 1957, 1974; Tolbert, 1974). It is during these stages that university students are being faced with decisions about choices of curriculum and major. In making these decisions they must be able to assess their own personal interests, attitudes, and the cognitive factors which contribute toward a career choice.

The concept and measurement of career maturity are the outgrowths of research in the psychology of career development. When the orientation to career development is seen as the accomplishment of a series of vocational tasks in an orderly sequence of life stages (Super, 1957), it becomes both theoretically and practically important to view the individual not only in terms of his/her life stage, but also in terms of his/her behavior in coping with the vocational developmental tasks of this stage in comparison with the coping behaviors of others in the

same stage (Super & Forrest, 1972). Individuals who have not mastered appropriate developmental tasks may need assistance from professionals in the field. However, prior to such assistance, the professional needs to be able to determine in which areas, or on what tasks, the individual needs assistance. The assessment of career maturity facilitates this determination.

Much emphasis has been placed upon the importance of values in the life of an individual (Darley & Hagenah, 1955; Morris, 1956; Rokeach, 1968; Rosenberg, 1957). More specifically, Super (1957), Ginzberg et al. (1951) and Tiedeman and O'Hara (1963) all place importance upon the relationship of values in the career decision making process. In recent years the construct of work values has been developed to include those goals which motivate an individual in the area of work (Super, 1970; Zytowski, 1970). It is proposed that persons with particular values orientations will seek work which satisfies needs related to those orientations. The satisfactions which an individual seeks in work, and those which may be the outcomes of work, may have important influences both on the career choice he/she makes and on the adjustment and success he/she experiences from work (Blai, 1964; Katz, 1969; Super, 1970).

Understanding the value orientation of an individual or of a particular population also has implications for professionals. These understandings are important as an aid in clarifying goals, needs, and helping determine the psychological appropriateness of a particular course or curriculum, choice of educational opportunities, and, in the case of this study, a more comprehensive evaluation of the manner in

which values are patterned and emphasized by those in the Exploratory and Establishment stages.

It has been mentioned that little has been written and less researched about the dynamics of these stages as related to university students. Information is available which indicates that these students are concerned about making a career choice, are often undecided about their choice of majors (Myers, 1972), or are dissatisfied with the career plans they have made (Astin & Panos, 1969). This concern and dissatisfaction is supported by the fact that university counseling centers offering vocational counseling experiences have noted a significant increase in demand for these services (Harman, 1973). Further information may help alleviate these situations. Accordingly, this study has attempted to answer the following questions in relation to university students:

1. Do freshmen, sophomores, juniors, and seniors differ in their respective levels of career maturity?

2. Do freshmen, sophomores, juniors, and seniors differ in their respective work values orientations?

3. Are there differences in career maturity and work values orientations on the basis of sex?

4. Is the variable age related to the development of career maturity and work values orientations?

5. Are there relationships among levels of career maturity and work values for all academic level classifications combined.

6. What factors, if any, underlie the relationships among career maturity and work values orientations?

In seeking to answer these questions the researcher utilized the Adult Vocational Maturity Inventory (AVMI), Form II, (Sheppard, 1971)

to assess career maturity. To ascertain the orientation to work values, the Work Values Inventory (WVI) (Super, 1970) was administered. Additionally, data on the personal characteristics of sex and age was obtained.

Definition of Terms

In order to clarify the purposes and procedures used in this study, the following definitions were utilized throughout:

Career Development Theory--assumed the theoretical approach of Donald E. Super. Career choice is viewed as an ongoing process wherein an individual progresses from one sequential life stage into the next, mastering certain necessary tasks at each stage before moving into the next (Super, 1957).

Career Maturity/Vocational Maturity--were used synonomously. This construct is theorized to emerge "at any stage and is viewed as planfulness or time perspective, exploratory attitudes and behaviors, the acquisition of information, knowledge of decision making, and reality orientation (a late maturing aspect of career maturity including self and situation)" (Super, 1974, p. 5).

University students/College students--were used synonomously to refer to persons enrolled for academic course work at institutions of higher learning which offer the bachelor degree.

Work Values--those satisfactions which are extrinsic to as well as those which are intrinsic in work; the satisfactions which may be the outcomes of work as well as those which one seeks in a work experience (Super, 1970).

Work Values orientation--the relative emphasis an individual places upon those satisfactions which he/she seeks and finds in work (Super, 1970).

Outline of the Remainder of the Study

Chapter II reviews the related literature in terms of Super's Career Development Theory, career maturity, work values, and the

personal characteristics of sex and age, and the relationship of these variables to the two constructs.

Chapter III states the null hypotheses and describes in greater detail the methodology, population, instrumentation, statistical analyses, and limitations of the study.

Chapter IV presents the findings and evaluation of the study. Analyses of data are reported and responses to the research questions made.

Chapter V summarizes the study, offer conclusions as a result of the findings, and makes recommendations based upon them.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

The review of the literature relevant to this research is comprised of four main sections: (1) Super's Career Development Theory, (2) vocational life stages, (3) career maturity, and (4) work values.

Super's Career Development Theory

Super's "differential-development-social-phenomenological psychology" (1969a, p. 9) views career development as one aspect of a person's total development. Physiological and psychological characteristics, as well as environmental conditions, have a significant influence upon the total development of the individual and thus upon his/her career development. Super bases his career development theory on developmental psychology, and accordingly, proposes that in the career process individuals pass through various sequential life stages and master appropriate developmental tasks during each stage.

On the basis of the factors described above, Super (1953) offers ten propositions as a foundation for his theory:

1. People differ in their abilities, interests and personalities.

2. They are qualified, by virtue of these circumstances, each for a number of occupations.

3. Each of these occupations requires a characteristic pattern of abilities, interests and personality traits, with tolerances wide enough, however, to allow both some variety of occupations for each individual and some variety of individuals in each occupation.

4. Vocational preferences and competencies, and situations in which people live and work, and hence their self-concepts, change with time and experience (although self-concepts are generally fairly stable from late adolescence until later maturity), making choice and adjustment a continuous process.

5. This process may be summed up in a series of life stages, characterized as those of growth, exploration, establishment, maintenance, and decline, and these stages may in turn be subdivided into (a) fantasy, tentative and realistic phases of the exploratory stage, and (b) the trial and stable phases of the establishment stage.

6. The nature of the career pattern (that is, the occupational level attained and the sequence, frequency, and duration of trial and stable jobs) is determined by the individual's parental socioeconomic level, mental ability, and personality characteristics, and by the opportunities to which he is exposed.

7. Development through the life stages can be guided partly by facilitating the process of maturation of abilities and interests and partly by aiding in reality testing and in the development of the self-concept.

8. The process of vocational development is essentially that of developing and implementing a self-concept; it is a compromise process in which the self-concept is a product of the interaction of inherited aptitudes, neural and endocrine makeup, opportunity to play various roles, and evaluation of the extent to which the results of role playing meet with the approval of superiors and fellows.

9. The process of compromise between individual and social factors, between self-concept and reality, is one of role playing, whether the role is played in fantasy, in the counseling interview, or in real life activities such as school classes, clubs, part-time work, and entry jobs.

10. Work satisfaction and life satisfaction depend upon the extent to which the individual finds adequate outlets for his abilities, interests, personality traits, and values; they depend upon his establishment in a type of work, a work situation, and a way of life in which he can play the kind of role which his growth and exploratory experiences have led him to consider congenial and appropriate. (pp. 189-190)

The four major elements, then, of Super's theory are (1) career patterns, (2) translating the personal self-concept into a vocational self-concept, (3) vocational life stages, and (4) career maturity. The construct of work values is interwoven in each of these elements since Super views satisfactions which are both intrinsic in and extrinsic to work as having influences upon the total career development process (1957, 1970).

The four elements mentioned above join together to make a comprehensive theory of career development wherein individuals are perceived to have career patterns. These career patterns are established by the vocational life stages the individuals pass through and by the developmental tasks they master. The rate at which individuals pass through the stages and the degree to which they master the developmental tasks determine their career maturity. The implementation of the self-concept into a vocational self-concept is an ongoing process in the individual's career pattern. Numerous psychological, physiological and environmental factors have an effect upon both the self-concept implementation and the development and clarification of work values. Super and his associates (Super, Crites, Hummel, Moser, Overstreet, & Warnath, 1957; Super & Overstreet, 1960) are quite explicit in describing the life stages and the developmental tasks. Super et al. (1963) are equally diligent in describing the implementation of the self-concept into a vocational self-concept, while an explanation of the relationship of work values to the entire career development process is not completely clear (Super, 1957). Thus, it was with the elements of vocational life stages and career maturity and the construct of work values that this study was specifically concerned.

Vocational Life Stages

Based upon the work done by Buehler (1933, In Super, 1957) on psychological life styles, Super (Super, 1957; Super et al., 1957; Super & Overstreet, 1960) developed a theoretical framework for sequential vocational life stages. These are (1) the Growth stage, birth to age 14; (2) the Exploratory stage, ages 15-24; (3) the Establishment stage, ages 25-45; (4) the Maintenance stage, ages 45-65; and (5) the Decline stage, beginning about age 65.

During the Growth stage (birth to age 14) the self-concept starts to develop as the child matures and begins to become aware of his/her needs. At this time "likes" are dominant and determine the individual's goals and activities. Toward the end of this stage, awareness of abilities develops and takes on significance.

In the Exploratory stage (ages 15-24) the individual becomes increasingly aware of self. This is expressed in role try-outs, and vocational exploration in school, part-time work, and leisure activities.

The Establishment stage (ages 25-45) follows wherein an occupational choice (either tentative or permanent) is made. Some changes may be made during this stage, but generally, stabilization occurs and a place in the world of work is maintained.

During the Decline stage (age 65-on) work activity changes with selective participation for some and retirement for others.

Two of these vocational life stages, the Exploratory stage and the Establishment stage, are particularly pertinent to college students. It is during these stages that the most vocationally significant events occur. Super et al. (1957) propose that each of these major stages is composed of several substages.

The Exploratory stage consists of the Tentative, Transition, and Uncommitted Trial substages. During the Tentative substage (ages 15-17) interests, abilities, opportunities, and values are considered. Tentative choices are made and experienced through discussion, courses, work, fantasy, and other experiences. In the Transition substage (ages 18-21) reality factors are more seriously considered as the individual considers the world of work, additional training or education, thus seeking to implement a vocational self-concept. The third substage is termed Uncommitted Trial (ages 22-24). This is the period during which the individual, after having made an apparently appropriate vocational choice, obtains a job and tries it out (Osipow, 1968).

The Establishment stage is similarly subdivided into three substages. These are identified as the Committed Trail, Stabilization, and Maintenance. During the Committed Trial substage (ages 25-30) the "trying out" process continues. Several changes in occupational choice may be made depending upon the appropriateness of the field of work. During this substage a suitable occupation usually is found. The substage which follows is Stabilization (ages 31-44). During this phase a more secure place in the community, as well as in the world of work, is sought. The final substage is termed Maintenance (ages 45-64). As the term implies, a secure place in the world of work has been found. A family, an occupation, and a role have been established and maintained (Osipow, 1968; Super et al., 1957; Tolbert, 1974).

Super (Super et al., 1963) suggests that the process of moving through the sequential life stages occurs by means of five activities which are termed developmental tasks. These tasks are particularly applicable to the vocational life stages of college students. He outlines the attitudes and behaviors, and ages relevant to these vocational developmental tasks as

1. Crystallization (14-18)
   a. awareness of the need to crystallize
   b. use of resources
   c. awareness of factors to consider
   d. awareness of contingencies which may affect goals
   e. differentiation of interests and values
   f. awareness of present-future relationships
   g. formulation of generalized preference
   h. consistency of preference
   i. possession of information concerning the preferred occupation
   j. planning for the preferred occupation
   k. wisdom of the vocational preference
2. Specification (18-21)
   a. awareness of the need to specify
   b. use of resources in specification
   c. awareness of factors to consider
   d. awareness of contingencies which may affect goals
   e. differentiation of interests and values
   f. awareness of present-future relationships
   g. specification of a vocational preference
   h. consistency of preference
   i. possession of information concerning the preferred occupation
   j. planning for the preferred occupation
   k. wisdom of the vocational preference
   l. confidence in a specific preference
3. Implementation (21-24)
   a. awareness of the need to implement preference
   b. planning to implement preference
   c. executing plans to qualify for entry
   d. obtaining an entry job
4. Stabilization (25-35)
   a. awareness of the need to stabilize
   b. planning for stabilization
   c. becoming qualified for a stable regular job or accepting the inevitability of instability
   d. obtaining a stable regular job or acting on resignation to instability

5. Consolidation (35 plus)
   a. awareness of the need to consolidate and advance
   b. possession of information as to how to consolidate and advance
   c. planning for consolidation and advancement
   d. executing consolidation and advancement plans. (pp. 84, 88, 90, 91)

Thus college students can be expected to be engaged in any of a variety of developmental tasks as well as to hold a wide variety of occupational attitudes.

Career Maturity

The most comprehensive research related to career maturity has been done by Super and his associates (Super, 1953; Super et al., 1957; Super and Overstreet, 1960). The most illustrious of this research is the twenty-year longitudinal Career Pattern Study (CPS) (Super & Overstreet, 1960) which began in 1951 with a group of 142 ninth-grade boys attending school in Middletown, New York. In this study Super sought to evaluate his "propositions" and to test the concept of career maturity.

For the CPS, Super identified five dimensions of vocational maturity: (1) orientation to vocational choice, (2) information and planning, (3) consistency of vocational preferences, (4) crystallization of traits, and (5) wisdom of vocational preferences. Orientation to vocational choice is assessed by determining the individual's degree of concern for vocational problems and effective use of available resources. Information and planning are related to the preferred occupation and are assessed by evaluating (1) the individual's specificity of information, (2) the degree of specificity of his/her planning, and (3) the extent of the individual's involvement in

vocational planning activities. Consistency of vocational preferences involves three indices, including consistency of vocational preferences within fields, within levels, and within families (or fields and levels combined).

Crystallization of traits had six indices: interest maturity patterning, liking for work, concern for work rewards, vocational independence, acceptance of responsibility for educational-vocational planning, and patterning of work values. The last dimension, wisdom of vocational preferences, involved indices which reflect the agreement between ability and preferences. These indices compared measured interests with preferences, measured interests with fantasy preferences, occupational level of measured interests with the occupational level of preferences and the socioeconomic accessibility of the preference of the student.

In an extension of his earlier theory, Super (Super et al., 1963) further developed his concept of career maturity. Osipow (1968) says of this extension:

> Vocational maturity allows the observer to assess the rate and level of an individual's development with respect to career matters. It is to be expected that vocationally mature behavior will assume different shapes depending upon the context provided by an individual's life stage . . . . In view of the fluid nature of vocational maturity, Super defined the concept normatively, in terms of the congruence between an individual's vocational behavior and the expected vocational behavior at that age. The closer the correspondence between the two, the greater the individual's vocational maturity. (p. 123)

More recently Super (1974) theorized that career maturity emerges "at any stage and is viewed as planfulness or time perspective, exploratory attitudes and behaviors, the acquisition of information,

knowledge of decision making, and reality orientation (a late maturing aspect of career maturity including self and situation)" (p. 5).

The Importance of Career Maturity

The question may be posed as to why there should be concern about career maturity. Professionals working in the areas of career development, career education and guidance need to know "what vocational maturity is, how it has been defined and measured, to what other variables it is related, and how it develops" (Super, 1974, p. 9). Super (1974) suggests that these professionals are often faced with the following questions:

1. When should instruction in the special disciplines and in the various vocational and professional subjects begin?

2. When should students be expected to choose between courses leading to different types of education and thus to different fields of work and occupations?

3. Is this student or group of students ready to make the choices called for by the school or college system, by the organization of the curriculum?

4. Does taking a certain course, studying a certain unit, engaging in a certain extracurricular activity, being enrolled in a work experience program, or being counseled by a professional counselor in any way affect the readiness of students to make these decisions? (p. 9)

Super summarizes by saying, "Without a knowledge of career development and vocational maturity there can be no such thing as genuine career education or career guidance" (p. 9).

Harmon (1974) suggests the reasons for measuring vocational maturity fall into three categories: (1) those associated with

counseling individuals, (2) those associated with counseling groups of individuals, and (3) those associated with making administrative decisions. She feels it is important to have an understanding of the normative levels of vocational development which can be expected from individuals of various ages. This understanding becomes especially important when the counselor is working with a client whose "maturity of decision making process differs from those in his age group" (p. 81). Harmon suggests that the understanding of normative data can be used to serve as a catalyst to discussions of mature vocational decision making with young adult clients. Furthermore, the measurement of vocational maturity offers diagnostic value in identifying yet unmastered developmental tasks which are normative for the individual's peer group.

When working with groups of individuals, Harmon (1974) believes the counselor may find it helpful to determine the vocational maturity level of the group members. Understanding this maturity level will aid the counselor in determining the needs of the group members as well as the appropriate strategies to be used.

Counselors also can utilize the measurement of vocational maturity to aid in administrative decision making by developing programs and curriculums appropriate for a particular target group. Finally, they also may find vocational maturity scores useful in evaluating the effects of individual and group counseling activities and in evaluating the results of career courses and programs (Harmon, 1974).

Jordaan (1974) also proposes that the measurement of career maturity is important in the development of counseling strategies.

He suggests that the versatile counselor who establishes objectives and develops procedures to meet the individual client's needs is able to play a variety of important roles. He states:

> One role is to help clients with their present problems; another is to anticipate, circumvent or forestall difficulties which may arise in the future; still another is to help the client to obtain and profit from experiences which will help him discover and develop possibilities and potentials. The first of these roles is the remedial or rehabilitative role, the second the preventive role, and the third the educational and developmental roles. A counselor employing any of the vocational maturity measures . . . will find himself playing one or more of these roles, or beginning with one and progressing to another. (p. 115)

Research seems to indicate that individuals differ in vocational readiness similarly to the way they differ with respect to any other human trait (Crites, 1971; Gribbons & Lohnes, 1965, 1969; Jordaan & Heyde, 1974; Super, Kowalski, & Gotkin, 1967; Super & Overstreet, 1960). The question then, is not, "Are they ready or unready?" but, "What are they ready for, and how ready are they?" (Jordaan, 1974, p. 115).

In summary, knowledge of career maturity can aid in identifying the individual's "readiness for various kinds of exploratory and reality testing experiences and in selecting and designing experiences which are most likely to repair deficits or build on existing strengths" (Jordaan, 1974, p. 120). Additionally, when career maturity is measured for large populations (e.g. a particular grade level) normative data become available. These data are helpful in understanding individuals in relation to their peer group, their supposed vocational life stage, and in determining appropriate preventative and intervention strategies for both individuals and/or for larger segments of that population.

Measurement of Career Maturity

In the last decade a number of models have been used for the development and measurement of the construct of career maturity (Super, 1974). The first model was based on theory and researched in Super's Career Pattern Study of ninth grade boys (Super, 1955; Super & Overstreet, 1960). Five basic developmental concepts and characteristics of mature behavior (Baldwin, 1967) served as the basis for this study:

1. Development proceeds from random, undifferentiated activity to goal-directed, specific activity;
2. Development is in the direction of increasing awareness and orientation to reality. (Baldwin's "The mature individual cognizes the situation");
3. Development is from dependence to increasing independence;
4. The mature individual selects a goal;
5. The mature individual's behavior is goal-directed. (Super, 1974, p. 12)

The refinement of vocational maturity indices in the Career Pattern Study (CPS) offered six dimensions upon which the measure was based: (1) orientation to vocational choice, (2) information and planning, (3) consistency of vocational preferences, (4) crystallization of traits, (5) vocational independence, and (6) wisdom of vocational preferences (Super, 1974, p. 13).

Based upon the CPS and subsequent research, Super and Forrest (1972) have developed the Career Development Inventory (CDI). This instrument measures three aspects of career maturity, two of which are attitudinal and one of which is cognitive. Scale A, Planning Orientation, deals with Concern With Choice, Specificity of Planning,

and Self-estimated Amount of Occupational Information. Scale B, Resources for Exploration, requires a self-rated evaluation of resources for use in planning. Scale C, Information and Decision Making, assesses the individual's possession of occupational information and his/her knowledge of how to integrate occupational and personal information into educational and vocational decisions (Forrest & Thompson, 1974).

Crites (1965, 1974) also has developed an instrument which is derived from Super's CPS. Formerly entitled the Vocational Development Inventory, this instrument is now known as the Career Maturity Inventory (CMI). It was constructed to measure two factors: (1) Career Attitudes and (2) Career Choice Competencies. The Attitude Scale, which has been used extensively, "was conceived to elicit the attitudinal or dispositional response tendencies in (career) maturity which are non-intellective in nature, but which may mediate both choice behaviors and choice (competencies)" (Crites, 1965, p. 7). As a complement to the Attitude Scale, the Competence Test of the CMI was designed "to quantify what might be designated as comprehension and problem-solving abilities as they pertain to the career (choice) process" (Crites, 1965, p. 7).

A third instrument, the Adult Vocational Maturity Inventory (AVMI) was developed by Sheppard in 1971. This instrument is based on the developmental theory and research of Super and on Crites' CMI. The AVMI was designed to assess "the attitudes an individual has when he is selecting a vocation" (Sheppard, 1971, p. 400). These attitudes are identified as (1) Involvement in the vocational choice process,

(2) Orientation toward work, (3) Independence in decision making, (4) Preference for vocational choice factors, and (5) Conceptions of the choice process.

Westbrook and Parry-Hill (1973) also have developed an instrument for assessing career maturity. The Cognitive Vocational Maturity Test (CVMT) is unique in that it measures only constructs which are considered to be cognitive in nature. Based upon much of Crites' (1965) research and the CMI, the CVMT inventories career maturity in six areas: (1) Fields of Work, (2) Job Selection, (3) Work Conditions, (4) Education Required, (5) Attributes Required, and (6) Duties.

The aforementioned career maturity inventories are the ones which have been developed more recently and which are most frequently in current use. These inventories offer a variety of theoretical rationales and approaches to the assessment of career maturity. Two of these instruments (CDI, CMI) have both attitudinal and cognitive orientations. Of the remaining two, one (AVMI) is strictly attitudinal and the other (CVMT) is strictly cognitive. Additionally, all except one, the AVMI, were developed originally for use with pre-adolescent and adolescent subjects. Although the CMI has been used with some post-secondary students and the CDI has a new unstandardized college form, neither are particularly oriented to this age group. The AVMI was developed specifically for use with adults. Because of this fact, and also because of its simplistic nature and ease of administration, it was chosen for use in this study.

Career Maturity and Personal Characteristics

Career Maturity and Age.

As was previously stated, the construct of career maturity is based on developmental theory and thus upon the

movement of an individual through sequential life stages. Thus, one might assume that as a person increases in chronological age his/her level of career maturity increases. However, research indicates that career maturity is related more to grade level and the similarity of experiences than actual chronological age (Crites, 1965; Super & Forrest, 1972; Super & Overstreet 1960). For example, Crites' (1965) validation sample for the CMI Attitude Scale was done with 2,822 students in grades 5-12. He found that grade level provided greater differentiation along the time dimension than age groupings. Additionally, Crites (1974) reported that students who are college preparatory majors were more career mature than vocational-technical students. Moreover, among the vocational-technical students, those who were more advanced in school were more career mature.

Westbrook and Mastie (1974) found similar results. For the CMVT standardization sample, they assessed the cognitive vocational maturity of 7,367 North Carolina public school pupils enrolled in a state wide career exploration program. The results of this study indicated an increase in mean scores with an increase in grade level for all six of the cognitive variables.

It seems apparent that there is some confusion as to the relationships of the variables of age, grade level, and career maturity. Some authors would differentiate between the two variables, while others make no differentiation.

Super and Forrest (1972) state, "An important characteristic for an age-related, developmental variable is its evidence of increase with age and experience. Within groups of similar age, scores should be relatively stable over short periods of time, but they should

increase across age groups" (p. 24). The authors reported that in their study of eighth, tenth, and twelfth grade students, the mean scores on the two attitudinal and one cognitive scale, and the total score, all increased uniformly with increase in grade level. They apparently equated age with grade level.

In the CPS, Super and Overstreet (1960) found career maturity to be related to other variables (e.g. intelligence) and age was of lesser importance, at least at the ninth grade stage of development. Osipow (1968) seeks to explain this situation:

> Of course, grade placement reflects greater homogeneity of experience than does age, since school experiences are structured, and consequently, grade placement implies a commonality of experience not necessarily present as a function of chronological age. (p. 131)

Finally, two other studies (Keith, 1976; Sheppard, 1971) reported no relationships between the level of career maturity and age. Keith assessed the career maturity of native university students and community college transfer students. Sheppard used the AVMI with three different adult groups: graduate students, vocational trainees, and unemployed males. The median age of the vocational trainees and graduate students was 30-39, while the median age of the unemployed group was 40-49. Sheppard reported the results of age analysis showed no significant differences in career maturity mean scores between younger and older subjects. Additionally, educational level analysis showed no difference in career maturity for those with less than a high school education and for those who had finished their secondary education. Sheppard (1971) explains this: "In any large heterogeneous sample of adults there are individuals who represent all levels of the

maturity continuum. If differences are examined in measured occupational maturity for age level groups, then no differences would be expected" (p. 4).

The relationship between career maturity and age is quite unclear. There seems to be some indication that career maturity and grade level are related; this may possibly be due to the homogeneity of experience. This study investigated the relationship between these two variables.

Career Maturity and Sex. One of the major concepts in the theory underlying Super's CPS was vocational life stages (Super & Overstreet, 1960). This study was done with ninth grade boys. The question arises as to whether the stages, and the concept of career maturity, are equally as applicable to females. In a culture such as ours (i.e. where for generations emphasis upon vocational choice has been male oriented; where females have often automatically assumed a career in the home) one might assume a difference in the career maturity level for women at any given vocational life stage. Osipow (1968), in support of this assumption, suggests that present theories and constructs for explaining the career development of women are inadequate. Richardson (1974) has no argument with the developmental concepts upon which the theory of vocational maturity is based, but views the career development of women to be distinctly different from that of men. She states:

> Maturity for men and women both would seem to imply goal directed behavior, increasing awareness and orientation to reality, and increasing independence. However, the development stages within which the vocationally relevant tasks and corresponding indices of coping behavior were identified are defined solely with respect to educational and occupational referents. The parameters of

> the vocational maturity models are the life stages and coping behaviors involved in the development of a career role in the occupational world, a process of development which is more continuous for men than for women. (p. 137)

Richardson (1974) points out that the female career development process involves both role development in the occupational world and role development in the more traditional homemaking world. The current formulation of career maturity for females is limited to the former aspect of career development. Additionally, she states:

> The life stages of exploration and establishment with their corresponding substages roughly correspond to adolescence and young adulthood. In the current models of vocational maturity the focus is on exploration and establishment in the occupational world. A model of vocational maturity and career development that would fit women would need to modify the definitions of the stages to attach more importance to exploration and establishment in the traditional aspects of the adult female role--that of wife and mother. The variety of patterns of female participation in the working world diverges sharply from male patterns with increasing age (the manifest similarity between the male and female career process decreases) as women deal with the developmental tasks associated with the two major aspects of their role development. Not only are there two sets of developmental tasks and associated coping behaviors for women but also the important developmental task of integrating the two aspects of the adult female role. (p. 137-138)

Richardson (1974) cites the work done by Douvan and Adelson (1966) to support her perspective. Their research indicated that the adolescent identity development of boys was organized around the issue of their occupational future. On the other hand, the identity development of girls seemed focused on the feminine role, of which occupational plans were simply an expression.

Research to date presents conflicting evidence in terms of sex differences in the measures of career maturity. Crites (1965), using

the VDI, reported that boys and girls obtained similar vocational maturity scores. Other researchers have found statistically significant sex differences. On the CDI girls were found to be superior on scales B and C (Resources for Exploration and Information and Decision Making) while on Scale A (Planning Orientation) there was no difference (Davis, Hagan, & Strauf, 1962; Smith & Herr, 1972). Super and Forrest (1972) reported that in a study with 200 boys and 200 girls there were no sex differences in career maturity on the basis of sex.

Richardson (1974) views the absence of sex differences on vocational inventories to be relatively unimportant. She supports this view by explaining that a high level of similarity between career maturity scores of boys and girls might be expected because of the sophistication of the instruments and the similarity of the career process for both sexes during the school years. She suggests that counselors use care in interpreting the meaning of vocational maturity scores when working with females. Additionally, she recommends vocational maturity instruments be used "only in conjunction with a separate measure of sex-role attitudes or career orientation" (p. 140).

In summary, the concept of career maturity is based on extensive, supportive research. There are a number of factors which determine the vocationally mature individual. The assessment of career maturity can be useful in determining which factors individuals need help in developing. This information can be used in counseling individuals and groups and in developing strategies and programs. The research is somewhat unclear as to how the personal characteristics of age and sex relate to the level of career maturity. Thus, in interpreting

the significance of the measure of career maturity, counselors must be careful to consider a number of variables.

Work Values

The concept of work values is based on the literature and research on personal values. Values may be viewed as the qualities which individuals desire and seek in the activities in which they engage, in the situations in which they live, and in the objects which they make or acquire. "Values are related to interests, but differ in that they are the qualities sought rather than the activities or objects which embody them: they are thus more fundamental" (Super, 1970, p. 4).

Work values, then, are a subset of personal values. They are the goals which motivate people to work. Work values may be viewed as intrinsic (those satisfactions which individuals seek in their work) or extrinsic (those satisfactions which may be the outcomes of that work) (Super, 1970). Zytowski (1970) suggests that work values are "a set of concepts which mediate between the person's affective orientation and classes of external objects offering similar satisfactions" (p. 170). Additionally, Katz (1969) perceives work values to be related to feelings about results or outcomes, such as the purpose or importance of an activity. He states:

> If there is a single synthesizing element that orders, arranges, and unifies . . . , that ties together an individual's perceptions of cultural promptings, motivating needs, mediating symbols, differentiating characteristics, and sense of resolution, that relates perception to self-concept, and that accounts more directly for a particular decision or for a mode of choosing, it . . . is the individual's value system. (p. 16)

Work Values and Career Development Theory

The concept of work values is an integral part of Super's career development theory and one of the indices of career maturity. He proposes that work satisfaction and life satisfaction are related to the degree to which an individual is able to find outlets for his personality traits, abilities, interests and values. Work satisfaction depends upon the individual's finding an occupation in which he/she can "play the kind of role which his [her] growth and exploratory experiences have led him [her] to consider congenial and appropriate" (Super, 1953, p. 186). Thus those values which are perceived to be of personal importance, and those values which have been developed as a result of family and peer relations and extraneous experiences, will influence the choice of vocation and the satisfactions which are derived from it.

It is during the Exploratory stage that individuals begin to become aware of their value system. It is also during this stage that the self-concept begins to emerge. Through exploration of "self" in the home, school and in part-time work, values become somewhat clarified and the implementation of the self-concept into a vocational self-concept begins to occur.

In the Establishment stage an occupational decision is either tentatively or permanently made. Much of the appropriateness or suitability of a particular choice is dependent upon the satisfactions which are derived from the work experience. These satisfactions are closely tied with the individual's needs and value system. Theoretically, by the time people reach this stage they have a higher level of career maturity and their values are better clarified and more crystallized.

The Measurement of Work Values

Several inventories of work values have been constructed specifically for use in counseling and prediction.

Hammond (1954, 1956) developed the Occupational Attitudes Rating Scales by asking college students what they wished to gain from their occupations. From their responses, two successive factor analyses yielded four factors: (1) Materialistic-economic status need, (2) Competitive personal status need, (3) Technical-structure need, and (4) Humanitarian-acceptance need. College freshmen who scored high on factor 1 had business, law, and pharmacy as career goals; those high on factor 2 had career goals of journalism, dramatics, radio, and advertising; those high on factor 3 had career goals of natural sciences, engineering, and optometry; and those high on factor 4 had social science, medicine, and social work as career goals.

Weiss, Dawis, England, and Lofquist (1964) developed the Minnesota Importance Questionnaire (MIQ) to measure vocational needs as corollaries of the dimensions of job satisfaction. Factor analysis yielded two factors: (1) reinforcers usually found in the work setting (intrinsic) and, (2) a status-need dimension with reinforcers usually accompanying a high position in society. Thorndike, Weiss, and Dawis (1967) reported a correlational analysis of the MIQ and the Strong Vocational Interest Blank (SVIB) (Strong & Campbell, 1966) scales for groups of college students and vocational rehabilitation clients. A high degree of relationship between interests and work needs was present for both groups, but the pattern of weighted scales was quite different. The authors attribute this condition to differences in

homogeneity of experiences in the two groups. Even so, they proposed that interests as measured by the SVIB and vocational needs as measured by the MIQ can be regarded as belonging to the same class of variables.

The Vocational Values Inventory (VVI) was developed by Stefflre to assess the value orientations of (1) Security, (2) Prestige, (3) Money, (4) Control, (5) Job freedom, (6) Altruism, and (7) Self-realization. Singer and Stefflre (1954a) studied high school students' responses when asked to name the three most important factors in choosing a job. In comparison with data from Centers' (1948) study with adults, they (Singer & Stefflre, 1954a) found that adolescents had a tendency to value money, fame, and interesting experience more than adults, whereas adults valued independence more than adolescents.

Super (1970) developed the Work Values Inventory in conjunction with his CPS. It measures 15 values constructs (see figure) and yields 15 scale scores. Ivey (1963) suspected correlations with the Kuder interest scales and the WVI. While he found fewer significant relationships than expected, he observed some systematic relationships. He proposed that though interests determine the direction of the career, values affect satisfaction with a given position. O'Hara and Tiedeman (1959) studied the accuracy of self-concept with increasing age using the WVI. They found that self-estimated work values increased in agreement with measured work values over the high school years more sharply than ability and social class, but not so well as interest or general values.

Various authors have proposed a number of work values as important. The figure, Taxonomy of Work Values (Zytowski, 1970, p. 182),

Super	Herzberg	Rosenberg	MIQ	Stefflre	Schaffer
Security	Job security	Secure future	Security	Security	
Prestige	Status	Status, prestige	Social status	Prestige	Socio-economic status
Economic return	Salary	Good deal of money	Compensation	Money	Economic security
Achievement	Achievement Advancement Recognition		Achievement Advancement Recognition		Mastery and achievement Recognition-approbation
Surroundings	Working conditions Company policy and administration		Working conditions Company policy and administration		
Associates	Interpersonal relations-Peers	Work with people	Co-workers		Affection and interpersonal relationships
Management	Interpersonal relations-Subordinates	Leadership	Authority	Control	Dominance
Supervisory	Interpersonal relations-Superiors Supervision-technical		Supervision-Human relations Supervision-technical		Dependence
Independence		Free of supervision	Independence	Job freedom	Independence
Altruism	Work itself	Helpful to others	Social service	Altruism	Social welfare
Creativity		Creative, original	Creativity	Self-realization	Self-expression Creativity and talent
Way of life	Factors in personal life		Moral values		Moral values
Intellectual Stimulation	Possibility of growth	Use special abilities	Ability utilization		
Variety	Responsibility	Adventure	Variety Responsibility Activity		

Taxonomy of Work Values (Zytowski, D. G., 1970, p. 182)

lists the measured values of the various instruments discussed above plus those of Rosenberg (1957) and Schaffer (1953) and the satisfiers and dissatisfiers of Herzberg, (1959). Zytowski (1970) discusses this taxonomy of work values:

> All six authors include some variation of security, prestige, and economic return. These plus advancement and recognition might be called "extrinsic factors," representing the outcomes of work, as contrasted with the means. Starting with surroundings and ending at supervision might be the category of concomitants . . . . The values between associates and altruism tap the range of relationship with people on the job, but the factors starting with independence through to the end of the list are likely all part of the job itself, or intrinsic factors, rather than extrinsic or outcomes of work. (p. 183)

He further observes that some value orientations are unique to a single author and have no counterpart in one or more other authors' value schemes. Nonetheless, "there is substantial agreement of 12 to 15 value categories, and this set may be taken as fundamental" (Zytowski, 1970, p. 183).

All of the inventories discussed above have been constructed explicitly for purposes of counseling and prediction (Zytowski, 1970). Most of the authors would agree that work values are related to motivation to work and satisfaction of needs. However, there is some discrepancy in agreement as to how many and which work values should be assessed. Based on Super's (1957) career development theory, the WVI is well known and widely used. The items, and thus the constructs, are quite suitable for use with college students (Super, 1970). As this study was based on Super's theory, and it examined the values of college students, the choice of the WVI was quite appropriate.

Work Values and Personal Characteristics

Work Values and Age

The relationships of work values and age have been studied by a number of researchers. Gribbons and Lohnes (1965) conducted a longitudinal study of boys and girls beginning in the eighth grade. These students were interviewed at the beginning of the eighth grade and again in the tenth and twelfth grades. The researchers reported there was some constancy of work values, but there was a predominant trend from "idealism" to "realism" in the students' choice of work values.

Hales and Fenner (1972) used the Ohio Work Values Inventory to study fifth, eighth, and eleventh graders. They reported a similarity in the work values in each of the three grades. The implication was that even though there are many physiological and psychological changes taking place at this time, the work values of students in this developmental phase do not change to a great degree.

Wagman (1965) assessed the work values of university students, using Centers' Job Values and Desires Questionnaire. He then compared his results with a study of high school students and adults done by Singer and Stefflre (1954a, 1954b). The results of Wagman's study related to both age and sex are

1. University men prefer esteem; university women value social service.
2. High school girls have a preference for security and independence; university women value interesting experiences.
3. University men prefer interesting experiences, leadership and esteem; high school boys prefer job security and independence.

"Differences in grade groups can be expected to reflect, to a high degree, whatever age differences might exist" (Super, 1970, p. 40). The WVI was used by Hana (1954) to demonstrate a lack of grade and age difference in the values of junior and senior high school students. In the WVI standardization sample with 7th and 12th grade girls and boys, Super (1970) reported no practical differences in choice of values. Boys and girls seemed to show a slight decrease on the Altruism and Esthetic scales as they progress from 7th to 12th grade. Girls had a slight decrease on the Management and Creativity scales between grades 7 and 12, while they increased on Achievement slightly. According to Super, none of the changes had any practical value.

In summary, work values orientations do not seem to differ across grade school levels. As students mature, changes in orientation to values seem to occur, but the time and direction are not clear.

Work Values and Sex. Several studies have been done on the relationships of work values and sex. In their longitudinal study, Gribbons and Lohnes (1965) found a difference in preferences for particular values between the sexes. Girls valued personal contact and social service whereas boys had a preference for salary and prestige. Even though some differences were found, Gribbons and Lohnes found more similarities than differences in the work values orientations of boys and girls.

In a study of the work values of high school students, Thompson (1966) found that males placed higher emphasis on high pay, leadership and recognition, while females had a preference for self-expression and social service.

As part of the standardization sample for the WVI, Super (1970) compared the scores of 7th and 12th grade boys and girls. In the 7th grade, there was virtually no difference in scores between the sexes on any of the 15 scales. In the 12th grade, boys tended to make slightly higher scores on the Economic Returns, Independence, and Management scales. Girls scored slightly higher on the Altruism and Achievement scales. Differences between the sexes was slight and not clear cut. For the two sexes there was considerable overlap on each value scale.

Richardson's (1974) viewpoint relative to the differences in the career development process of men and women has already been discussed. From this discussion, it might be reasoned that women, who are most often simultaneously involved in two career development processes, will have their own unique value orientations and, at the same time, experience similarities with men.

In summary, during the mid-school years there seems to be little difference in work values on the basis of sex. As individuals mature work values become more differentiated with males emphasizing more occupationally oriented values (e.g. leadership, economic returns) and females emphasizing more traditionally feminine (e.g. altruism, social service) values. Females may also choose the more vocationally oriented values. This study examined the work value orientations of college males and females in an effort to determine possible patterns and differences.

Career Maturity and Work Values

Although the construct of career maturity and the concept of work values orientation are important factors in an individual's development,

little research has been done to determine if and how they relate. Two recent studies are pertinent to this topic.

Miller (1974) investigated the relationships of career maturity to work values using a population of 62 subjects enrolled in a remedial reading class at a community college. He proposed that (1) career maturity is positively related to differentiation of work values within subjects, and (2) career maturity is positively associated with intrinsic work values and negatively associated with extrinsic work values. Miller used Werner's (1948) postulate that psychological and biological development progresses from undifferentiated global states to differentiated patterned states as a basis for his first hypothesis. Miller's second hypothesis was based on the vocational development literature which asserts that in the vocational maturation process, "adolescents and young adults become increasingly task oriented" (p. 367).

Using these rationales, Miller tested his hypotheses by administering the WVI and the VDI-Attitude Scale to 24 males and 38 females. Based on item content and the WVI manual, the 15 value scales were categorized as either: (1) Intrinsic work values--Achievement, Altruism, Creativity, Esthetics, Intellectual Stimulation, and Management; or (2) Extrinsic work values--Associates, Economic Returns, Independence, Prestige, Security, Supervisory Relations, Surroundings, Variety, and Way of Life. The results of his study indicated that vocational maturity is positively related to differentiation of work values for females but not for males. Additionally he found that "none of the intrinsic work values were positively associated with vocational maturity for males, while for females, two intrinsic work values were positively associated with vocational maturity: Achievement and Creativity"

(p. 369). In terms of extrinsic work values, all correlations were in the predicted direction for both females and males, although few were significant. Thus, the more vocationally mature female has a better differentiation of work values. Although results did not reach statistical significance for males, the correlation between within subject variance of work values and career maturity was positive, as Miller had hypothesized.

Miller also found that the males were both younger than the females and slightly less vocationally mature. He suggested that this may account for the nonsignificant correlation between career maturity and intra-subject work values variance among the males. He states, "Nevertheless, the results of testing the first hypothesis suggest that the process of vocational maturation involves the development of work values which proceed from a global to a differentiated structure" (p. 370).

In another study, Walls and Gulkus (1974) tested the relationships of job reinforcers, occupational values and career maturity with 207 vocational rehabilitation clients and 59 graduate students. The AVMI (Sheppard, 1971) was used to assess career maturity, while the Minnesota Job Description Questionnaire (Borgen, Weiss, Tinsley, Dawis, & Lofquist, 1968) was used to evaluate job reinforcers. The occupational values examined were those which were used by Fretz (1972).

The authors hypothesized that (1) the AVMI would differentiate between vocational rehabilitation clients and graduate students, with the latter having greater career maturity; (2) those subjects having high career maturity would value independence, security, opportunity

to use special talents, challenge and self-satisfaction. Additionally, individuals who would be low in career maturity would consider the following values important: telling other workers what to do, having the position of "somebody" in the community, and prestige.

Results supported the first hypothesis with subjects who (1) were below 21 years of age, (2) had less than a twelfth grade education, and (3) were vocational rehabilitation clients. All subjects falling in these three categories were significantly less career mature than the graduate students. Additionally, the researchers found that males and females did not differ in levels of career maturity.

In investigating the relationships between occupational values and career maturity, Walls and Gulkus found that subjects who considered independence, opportunity to use special talents, challenge, and self-satisfaction important were significantly more vocationally mature than those who ranked those values as low in importance. In contrast, subjects who saw pay received, security, prestige, and advancement as highly important were significantly less vocationally mature.

The authors viewed implications of their findings to be in support of (1) the vocational maturity construct and (2) the idea that occupational attitudes may be used to estimate or represent a person's rate or degree of vocational development.

In summary Walls and Gulkus (1974) state:

> If vocational attitudes and behaviors develop over time through processes of growth and learning, the behavioral repertoire should become increasingly reality oriented (Super & Overstreet, 1960). For individuals who have had limited learning opportunities, basic concerns such as high salary, prestige and telling others what to do are

> to be reasonably expected. Persons who have developed an extensive behavioral repertoire, through learning to meet the characteristic demands of vocational developmental tasks, are able to seek personal rather than public accomplishment, and to use special talents to gain the self-satisfaction associated with successfully meeting a challenge. Does a given client have sufficient occupation-oriented maturity to be able to deal adequately with required choice-making tasks? Presumably, vocational counselors would be in a better position to facilitate the process if they were able to answer this question. Additional work is required to provide normative and adjunct information contributing to validity of the vocational maturity construct and to test its utility in analysis of adult vocational behavior. (p. 331)

Although Miller (1974) and Walls and Gulkus (1974) used different instruments for measuring both career maturity and work values, their findings are quite similar. From these results it may be at least tentatively concluded that (1) vocational maturity is a valid construct, and (2) there is a relationship, although not precise, between the orientation to work values and career maturity. It would seem, as Walls and Gulkus suggest, that the more career mature individual places more importance upon intrinsic career values as opposed to extrinsic values. This study offered more information on the subject.

Summary

Super's career development theory views vocational choice as an ongoing process from birth to old age. Individuals pass through sequential life stages and must master certain vocational development tasks during each stage. Psychological, physiological and environmental conditions have important influences upon this process. It is during the Exploratory and Establishment stages that the most vocationally significant events occur. Five developmental tasks are particularly

pertinent to these two stages: (1) Crystallization, (2) Specification, (3) Implementation, (4) Stabilization, and (5) Consolidation.

Career maturity is a construct which was developed to evaluate the individual's rate and level of career development. It is present at any time in the life of an individual and "is viewed as planfulness or time perspective, exploratory attitudes and behaviors, the acquisition of information, knowledge of decision making, and reality orientation" (Super, 1974, p. 5). An individual's level of career maturity is evaluated in terms of his/her particular life stage. The assessment of career maturity can be useful in helping people develop yet unmastered tasks which are age-and-stage appropriate.

Instruments for assessing career maturity have been discussed. One of these instruments is strictly attitudinal, one is strictly cognitive, others are both attitudinal and cognitive in orientation.

Work values are viewed as those factors which motivate people to work. They may be either intrinsic (satisfactions sought from the work itself) or extrinsic (satisfactions which may be the outcomes of work).

Work values are considered to play an important part in the career choice process. It is during the stages of Exploration and Establishment that they become defined and crystallized for the individual.

While Super well delineates the vocational life stages and the necessary developmental tasks during each, he does not thoroughly discuss the development of work values. In his theory, these values are integrated with the concept of the implementation of a self-concept into a vocational self-concept. Exactly how this integration occurs is unclear.

Several work values inventories were discussed. Super's WVI was chosen for use in this study because of the extensive research already done with it and because it is based solely on his theoretical framework.

The relationships of career maturity, work values, and the personal characteristics of age and sex were discussed. Although studies by Miller (1974) and Walls and Gulkus (1974) seemed to indicate a relationship between career maturity and work values, it is yet unclear as to the relationships of these two variables, and the personal characteristics of age and sex in regard to the college student population. There are no data reported in the literature about this specific population. This study investigated these relationships in terms of college students.

CHAPTER III

RESEARCH METHODOLOGY

The significance of the constructs of vocational life stages, career maturity, and work values in career development theory have been established by previous research. The literature suggests that these constructs, along with certain personal characteristics, may have important consequences in the career choice process.

This study investigated differences in career maturity and work values across academic levels, and for all groups combined, with a sample drawn from freshmen, sophomores, juniors, and seniors at the University of Florida. Additionally, this study examined the differences in career maturity and work values on the basis of sex. It also explored the relationships of career maturity, work values, and age.

The Adult Vocational Maturity Inventory (AVMI), Form II (Sheppard, 1971), and the Work Values Inventory (WVI) (Super, 1970) were administered to a population of 448 University of Florida students from the four undergraduate academic level classifications. Additionally, information as to age and sex of the subjects was obtained.

The remainder of this chapter will detail the following aspects of the research methodology: (1) research approach and null hypotheses, (2) instrumentation, (3) the sampling procedure, (4) data analyses, and (5) limitations of the study.

The Research Approach and Hypotheses

The nature of this study was descriptive and developmental using a cross-sectional approach (Issac & Michael, 1971) to determine the relationships between the two main criterion variables, career maturity and work values. The relationship of the independent personal characteristic variable of age to the two main criterion variables was examined. Additionally, the differences in the two main criterion variables on the bases of academic level classification and sex were investigated.

The following null hypotheses were tested:

$H_0 1$: There are no differences in the career maturity of university students on the basis of academic level classification.

$H_0 2$: There are no differences in the career maturity of university students on the basis of sex.

$H_0 3$: There are no differences in the work values of university students on the basis of academic level classification.

$H_0 4$: There are no differences in the work values of university students on the basis of sex.

$H_0 5$: There are no relationships between career maturity and work values of university students.

$H_0 6$: There are no relationships between career maturity and work values of university students across academic level classifications.

$H_0 7$: There is no relationship between age and work values of university students.

$H_0 8$: There is no relationship between age and work values of university students on the basis of academic level classification.

$H_0 9$: There is no relationship between age and career maturity of university students

$H_0$10: There is no relationship between age and career maturity of university students on the basis of academic level classification.

Instrumentation

The Adult Vocational Maturity Inventory, Form II

The Adult Vocational Maturity Inventory (AVMI), Form II, was developed by David I. Sheppard (1971) in answer to the need for an inventory which would assess the vocational maturity levels of adults. Based upon the developmental theoretical orientations of Super (1953, 1957), Super and Overstreet (1960), and Tiedeman (1961), Sheppard sought to design an instrument which would assess the occupational attitudes of post-adolescent individuals who are in the process of selecting a career. He identified these attitudes by the following dimensions: "(1) Involvement in the vocational choice process, (2) Orientation toward work, (3) Independence in decision-making, (4) Preference for vocational choice factors, (5) Conceptions of the choice process" (Sheppard, 1971, pp. 400-401). A copy of the AVMI is shown in Appendix C.

The AVMI, Form II, is a 40-item inventory with a five-point Likert type response format which yields one total score. Responses are weighted from 1-5, with Strongly Agree = 5; Agree = 4; Neutral = 3; Disagree = 2; and Strongly Disagree = 1. Thus possible scores range from 40-200 with a lower score indicating a higher level of career maturity.

Two types of initial validity information were provided by Sheppard (1971). First, the 40 items used were selected on the basis

of item analyses from an original pool of 60 items. Second, Sheppard found significant differences in the AVMI scores of three criterion groups: graduate students, unemployed males, and vocational trainees. Additionally, support for the construct validity of the AVMI was provided by Walls and Gulkus (1974) who found significant and directionally appropriate correlations with measures of occupational reinforcers. Finally, empirical support for the AVMI construct validity was provided by a recent factor analysis (Loesch, Shub & Rucker, 1977).

The AVMI has several other positive psychometric properties. Sheppard (1971) reported an internal consistency (Spearman-Brown correction) reliability coefficient of .84. Both studies, done by Walls and Gulkus (1974) and Loesch, Shub and Rucker (1977), found no significant differences in the AVMI scores on the basis of sex. Finally, Sheppard (1971), using a chi-square goodness-of-fit test, demonstrated that AVMI scores are normally distributed within relatively homogeneous groups.

The Work Values Inventory

The Work Values Inventory (WVI) (Super, 1970) was developed by Super as a "means of assessing the goals which motivate man to work" (1970, p. 4). It purports to measure values which are intrinsic in work as well as those which are extrinsic to work (i.e. those satisfactions which individuals seek in work and those which are the concomitants of work).

The literature on values and job satisfactions provided the source and basis for the original trial items. These items were refined

by means of tape-recorded interviews, essays, card sorts, item and factor analyses, and then examined for test-retest reliability. The refined instrument currently in use measures 15 value constructs: (1) Altruism, (2) Esthetic, (3) Creativity, (4) Intellectual Stimulation, (5) Achievement, (6) Independence, (7) Prestige, (8) Management, (9) Economic Returns, (10) Security, (11) Surroundings, (12) Supervisory Relations, (13) Associates, (14) Way of Life, and (15) Variety. (Appendix D offers an interpretation of the 15 work value constructs on the WVI.) The inventory yields 15 scale scores, one for each value construct. It contains 45 items, with three items contributing to each of the 15 scores. The WVI is a self-report rating instrument with a five-point Likert type response format. Subjects are requested to respond to statements in terms of their importance with: 5 = Very Important; 4 = Important; 3 = Moderately Important; 2 = Of Little Importance; 1 = Unimportant.

Test-retest reliability on 99 tenth grade students over a two week period ranged from .74 to .88 with a median of .83. In a review of the WVI, French (1971) evaluated these reliability figures as reasonable and particularly good for three-item scales. Tiedeman's (1974) review for The Seventh Mental Measurements Yearbook states that the "respectable size of these correlations for three-item tests suggests that the claimed selection of items on the basis of their homogeneity indexes was actually quite adequately achieved" (p. 1479).

Super (1970) acknowledges there are some intercorrelations among the 15 scales, and suggests that this condition is not uncommon for scales which are logically developed and derived from theory and

research and then refined by internal consistency methods. However, of the possible 105 intercorrelations, few have been found to have high correlations.

The manual for the WVI (Super, 1970) discusses the construct, content, and concurrent validities of the instrument. In attempting to determine construct validity Super first asks the question, " . . . are the variables which the WVI seeks to measure meaningful when viewed in the light of psychological theory?" (p. 35). A number of the values inventoried by the WVI were developed from the Allport-Vernon-Lindzey Study of Values (AVL) (Allport, Vernon & Lindzey, 1960) and Spranger's theory upon which this instrument is based. Research indicates that the AVL has validated that theory (Super, 1970). Other assessed values were derived from the research on job satisfaction and morale and the theorizing (backed up by relevant research findings) of Darley and Hagenah (1955), Fryer (1931), Ginzberg et al. (1951), and Super (1957).

Content validity for the WVI is based upon the self-report method. Items were field tested using card-sorts, labelling experiments, and essays by subjects. Finally, Super (1970) states, "The case for content validity of the WVI rests, then, on the phrasing of items in the light of their comprehension by teenagers and young adults. It is supported further by the relative independence of the scales . . ." (p. 39).

Although there is some theoretical information contained in the manual related to concurrent validity, there is little evidence to support this type of validity for the newer form of the WVI. Even so

Tiedeman (1972) feels that the inventory does offer ". . . concurrent results with outside criteria in accord with expectations, although results are not markedly different, merely statistically so" (p. 1479).

Normative data are good for grades 7-12 as they were carefully developed using a representative sample of the nation and then adjusted according to the proportions of cases in each of several categories (Tiedeman, 1972). Unfortunately, there are no normative data available for university students.

Tiedeman (1972) indicates that the instrument is basically a good one with a solid base and meets some of the necessary criteria for a useful inventory.

The Sampling Procedure

An attempt was made to obtain 100 subjects from each academic level classification who were currently enrolled during the Spring and Summer Quarters, 1977, at the University of Florida. However, due to time constraints and difficulty in finding classes which were composed of predominantly sophomores and juniors, the smallest group (sophomores) contained 61 subjects. It should be noted that this number exceeded the minimum of 60 per academic level classification which was originally proposed and considered acceptable for the purposes of this study. Table One, in Chapter IV, offers a breakdown of the sample by academic level classification and sex.

The sample was drawn primarily from the Colleges of Arts and Sciences, Business Administration, Education, Journalism, and the University College. The choice of colleges was made by the researcher

and based upon the official undergraduate enrollment figures from the University of Florida Registrar's Office. These colleges were selected because of (1) their larger enrollments and (2) the probability that this particular combination would yield a more nearly equal distribution of males and females in the total sample. As Table One (Chapter IV) indicates, the yield was 216 females and 232 males. The research proposal indicated that there would not be an attempt to obtain an equal number of subjects from each college, since selection of classes would be dependent upon accessibility to both classes in progress and available subjects in these classes.

Data collection was accomplished by the researcher visiting classes in session during the Spring and Summer Quarters, 1977. Selection of these classes was based upon the probable academic level classification of the majority of students taking the course. For example, a 400-level course was assumed to have mostly seniors, a 300-level course, mostly juniors. Selection of classes was also based upon the college offering the course, with the assumption that most of the students enrolled would be registered in that college (e.g. a course offered by the College of Journalism--JM 302--would consist mainly of journalism students). This assumption was correct in all cases.

Information as to current college course offerings and grade level classification was obtained from the University Registrar's Office. An additional method of class selection was that of the researcher contacting individual faculty members (teaching in the specified colleges) with whom she was acquainted and inquiring as to the course level they were teaching.

The researcher contacted class instructors, explained the purpose of the research and possible implications thereof, the class time required for data collection (35 minutes), and requested access to their class(es). This was a successful method in most instances. The researcher continued to contact instructors and visit classes until the specified minimum (i.e. 60) at each academic level was obtained.

Data Collection

Arrangements for scheduling were made by the researcher with the individual instructors, at their convenience. The instructors introduced the researcher, who then briefly explained the purpose of the research to the subjects and gave instructions for coding of demographic data and administration of the inventories (See Appendix B).

The subjects were provided with a cover letter (Appendix A) which

1. briefly explained the purpose of the study,
2. indicated that participation was voluntary,
3. assured the subjects that individual scores would be kept confidential,
4. provided a human subjects' release form,
5. offered subjects an opportunity for personal feedback, and
6. expressed the researcher's appreciation for their participation.

In addition to the cover letter, a set of the research instruments, a NCS Trans Optic Scan Answer Sheet, and a number 2 pencil were provided the subjects.

Data Analyses

The NCS Trans Optic Answer Sheets were read by an optic scan machine which automatically recorded the data on magnetic tape. The data was then transferred, by way of programming, to a disk at the Northeast Regional Data Center (NERDC). Data analyses were done by computer at NERDC. The Statistical Package for the Social Sciences (SPSS) was used for these analyses.

In order to determine the differences in career maturity as a function of sex and academic level classification, a 2 x 4 factorial analysis of variance with a multiple regression analysis was computed, based on the AVMI total scores. To determine the differences in the 15 dependent work values variables, as a function of sex and academic level classification, a 2 x 4 factorial analysis of variance with a multiple regression analysis was done based on the raw scores for each of the 15 scales. If significant differences were found on the basis of academic level classification or sex, the Student-Newman-Keuls multiple comparison procedure was utilized to determine where the significant differences were.

To ascertain the relationships among work values, career maturity, and age for all academic level classifications, and across academic level classifications, the researcher used a Pearson product--moment intercorrelation matrix of the AVMI total score, the 15 WVI scale scores, and age.

An oblique principal-axis factor analysis was computed to determine the factors underlying the relationships among the 15 WVI variables and the AVMI variable.

Limitations

Several limitations exist for this study. One is related to the instruments; the others are basically methodological.

Neither the AVMI nor the WVI has published normative data for university students. Therefore, it is not possible to compare the scores on either career maturity or the work values constructs with any national norms.

The methodological limitations are relative to the sample. Access to subjects required agreement by instructors in the various colleges to allow use of class time for data collection. This was particularly a problem when attempting to obtain an appropriate sample size from the College of Education.

The mean ages across the four levels ranged from 19.0 to 22.95 with an overall mean of 21.19. This would indicate that the sample was relatively homogeneous in terms of this variable and thus a significant difference in career maturity across academic levels could not be expected.

One variable which might be considered important in a study such as this is that of ethnic background. Although data were collected relative to this variable, the total sample did not yield numbers of subjects, other than Caucasian, sufficient to provide for statistical calculations.

CHAPTER IV

RESULTS OF THE STUDY

This study sought to explore the differences in career maturity and work values as a function of sex, academic level classification, and across academic levels of university students. Additionally, it examined the relationships among career maturity, work values, and age for university students as a group and on the basis of academic level classification. The remainder of this chapter will present (1) a description of the sample and (2) the null hypotheses and the results related to these hypotheses.

The Sample

The sample consisted of 448 students enrolled during the Spring and Summer Quarters, 1977, at the University of Florida. Of the 448 subjects, 51.8% were males and 48.2% were females. Freshmen (30.4%) and seniors (40.0%) comprised 70.4% of the entire population. A breakdown of the sample by academic level classification and sex is offered in Table 1.

Although a comparison of results by college was not proposed, it may be of interest to note that an analysis of the sample revealed the following breakdown: College of Arts and Sciences, 55; College of Business Administration, 87; College of Education, 15; College of Journalism, 54; University College, 195, and other colleges, 42. Appendix E is a distribution of the sample by college by sex.

Table 1

Frequencies of Respondents Broken-down by Academic Level Classification and Sex

Academic level	Sex				Total
	Males	%	Females	%	
Freshmen	61	44.9	75	55.1	136
Sophomores	32	52.5	29	47.5	61
Juniors	31	43.1	41	56.9	72
Seniors	108	60.3	71	39.7	179
All levels	232	51.8	216	48.2	448

A description of the sample by age means, standard deviations, sex, and academic level classification is available in Table 2. The mean ages across academic level classifications ranged from 19.0 to 22.95 with a mean age for the total sample of 21.19. Thus in relation to age, the sample was homogeneous.

Results Related to the Null Hypotheses

Differences in Career Maturity

The differences in career maturity as a function of sex, academic level classification, and across all academic levels were calculated through the use of a 2 x 4 factorial analysis of variance (ANOVA) and multiple regression analysis based on the total score of the AVMI. It should again be noted that on this instrument lower scores indicate higher levels of career maturity.

$H_0 1$: There are no differences in the career maturity of university students on the basis of academic level classification.

An analysis of the AVMI mean scores and standard deviations by academic level classification and sex is shown in Table 3. Freshmen had a mean score of 100.03, while the mean score for seniors was 97.28. These results indicate a trend in the expected direction, i.e., as academic level increases there is a corresponding increase in the level of career maturity. Table 4 shows a summary of the AVMI factorial analysis of variance by academic level classification and sex. Although differences in mean scores across academic levels did exist, none were found to be statistically significant. Therefore, $H_0 1$ is not rejected.

Table 2

Age Means and Standard Deviation Broken-down by Academic Level Classification and Sex

Academic level		Males	Females	Total
Freshmen	$\bar{X}$	19.77	18.37	19.00
	s.d.	7.65	1.28	5.23
Sophomores	$\bar{X}$	19.47	19.41	19.44
	s.d.	.88	.78	.83
Juniors	$\bar{X}$	22.19	22.56	22.40
	s.d.	2.76	8.09	6.33
Seniors	$\bar{X}$	22.60	23.48	22.95
	s.d.	1.76	8.79	5.70
All levels	$\bar{X}$	21.37	20.99	21.19
	s.d.	4.44	6.57	5.57

Table 3

Adult Vocational Maturity Inventory Means and Standard Deviations Broken-down by Academic Level Classification and Sex

Academic level		Males	Females	Total
Freshmen	$\bar{X}$	103.33	97.35	100.03
	s.d.	13.73	13.49	13.87
Sophomores	$\bar{X}$	100.00	99.31	99.67
	s.d.	11.29	15.62	13.41
Juniors	$\bar{X}$	104.32	92.54	97.61
	s.d.	21.12	16.35	19.33
Seniors	$\bar{X}$	99.55	93.83	97.28
	s.d.	16.27	14.44	15.78
All levels	$\bar{X}$	101.24	95.54	98.49
	s.d.	15.83	14.76	15.57

Note: Lower scores indicate higher levels of vocational maturity.

Table 4

Summary of Academic Level Classification by Sex Factorial Analysis of Variance of Adult Vocational Maturity Inventory Scores

Source	SS	df	MS	F
Sex	3253.60	1	3253.60	13.89*
Academic level	1013.66	3	337.89	1.44
Sex by academic level	1034.96	3	344.99	1.47
Explained	5629.31	7	804.19	3.43
Residual	103525.75	441	234.22	
Total	109155.06	448	243.11	

*p <.05

$H_0$2: There are no differences in the career maturity of university students on the basis of sex.

Table 3 indicates that for all levels the AVMI mean score for males was 101.24 and the mean score for females was 95.54. This difference was found to be statistically significant when the ANOVA was computed (see Table 4). Thus, college females tend to have higher levels of career maturity than college males. Therefore, $H_0$2 is rejected.

Differences in Work Values

The tests for differences in work values on the basis of academic level classification and sex were carried out in a manner similar to the test for differences in career maturity, except that an ANOVA with a multiple regression analysis was computed for each of the 15 WVI scale mean scores.

$H_0$3: There are no differences in the work values of university students on the basis of academic level classification.

Table 5 presents the 15 Work Values Inventory Scale means and standard deviations by academic level classification and sex. Individual scores on each scale has a possible range of 3-15. A total score of 15 on a scale would indicate "Very Important a 12 would be considered "Important"; a 9, "Moderately Important"; a 6, "Of Little Importance"; and a 3, "Unimportant." An analysis of Table 5 indicates that the scale mean scores across academic levels ranged from a low of 8.10 for freshmen on the Esthetics scale to a high of 13.56 for freshmen on the Way of Life scale. Eleven of these scale means fell between 11.00 and 12.50.

Table 5

Work Values Inventory Scale Means and Standard Deviations
Broken-down by Academic Level Classification and Sex

Scale	Academic level		Males	Females	Total
Creativity					
	Freshmen	$\bar{X}$	10.43	10.88	10.68
		s.d.	2.45	2.21	2.32
	Sophomores	$\bar{X}$	11.59	11.37	11.49
		s.d.	1.98	2.98	2.49
	Juniors	$\bar{X}$	11.42	11.80	11.64
		s.d.	2.88	2.15	2.48
	Seniors	$\bar{X}$	10.75	11.38	11.00
		s.d.	2.39	2.93	2.63
	All levels	$\bar{X}$	10.87	11.29	11.07
		s.d.	2.45	2.57	2.51
Management					
	Freshmen	$\bar{X}$	9.36	9.11	9.22
		s.d.	2.18	2.43	2.31
	Sophomores	$\bar{X}$	9.72	9.52	9.62
		s.d.	1.80	3.09	2.48
	Juniors	$\bar{X}$	9.45	9.88	9.69
		s.d.	2.53	2.40	2.45
	Seniors	$\bar{X}$	9.85	9.83	9.84
		s.d.	2.26	2.20	2.23
	All levels	$\bar{X}$	9.65	9.54	9.60
		s.d.	2.21	2.46	2.33

Table 5 (Continued)

Scale	Academic level		Males	Females	Total
Achievement					
	Freshmen	$\bar{X}$	11.85	12.88	12.42
		s.d.	2.52	2.51	2.56
	Sophomores	$\bar{X}$	12.00	13.03	12.49
		s.d.	1.74	2.96	2.43
	Juniors	$\bar{X}$	12.48	13.39	13.00
		s.d.	2.97	1.74	2.37
	Seniors	$\bar{X}$	11.90	13.08	12.37
		s.d.	2.54	2.46	2.57
	All levels	$\bar{X}$	11.98	13.06	12.50
		s.d.	2.49	2.43	2.52
Surroundings					
	Freshmen	$\bar{X}$	10.97	11.56	11.29
		s.d.	2.37	2.23	2.30
	Sophomores	$\bar{X}$	10.47	11.69	11.05
		s.d.	2.27	2.35	2.37
	Juniors	$\bar{X}$	10.97	12.24	11.69
		s.d.	3.04	2.41	2.75
	Seniors	$\bar{X}$	10.58	11.31	10.87
		s.d.	2.11	2.43	2.26
	All levels	$\bar{X}$	10.72	11.63	11.16
		s.d.	2.33	2.35	2.38

Table 5 (Continued)

Scale	Academic level		Males	Females	Total
Supervisory Relations					
	Freshmen	$\bar{X}$	12.05	11.93	11.99
		s.d.	2.53	2.88	2.72
	Sophomores	$\bar{X}$	11.91	12.34	12.11
		s.d.	2.13	3.03	2.58
	Juniors	$\bar{X}$	11.65	13.49	12.69
		s.d.	3.01	2.56	2.89
	Seniors	$\bar{X}$	11.57	12.14	11.80
		s.d.	2.76	2.86	2.81
	All levels	$\bar{X}$	11.75	12.35	12.04
		s.d.	2.65	2.87	2.77
Way of Life					
	Freshmen	$\bar{X}$	13.26	13.80	13.56
		s.d.	2.83	2.69	2.76
	Sophomores	$\bar{X}$	13.81	13.24	13.54
		s.d.	1.47	3.63	2.71
	Juniors	$\bar{X}$	12.94	13.93	13.50
		s.d.	3.34	2.22	2.78
	Seniors	$\bar{X}$	12.64	13.49	12.98
		s.d.	3.19	2.95	3.12
	All levels	$\bar{X}$	13.00	13.65	13.31
		s.d.	2.95	2.83	2.91

Table 5 (Continued)

Scale	Academic level		Males	Females	Total
Security					
	Freshmen	$\bar{X}$	12.05	12.09	12.07
		s.d.	2.88	2.69	2.77
	Sophomores	$\bar{X}$	11.50	11.45	11.48
		s.d.	2.40	2.91	2.63
	Juniors	$\bar{X}$	11.16	11.93	11.60
		s.d.	3.37	2.83	3.07
	Seniors	$\bar{X}$	10.81	11.13	10.94
		s.d.	2.93	2.61	2.81
	All levels	$\bar{X}$	11.28	11.66	11.46
		s.d.	2.94	2.74	2.85
Associates					
	Freshmen	$\bar{X}$	10.05	10.28	10.78
		s.d.	2.09	1.86	1.96
	Sophomores	$\bar{X}$	9.56	10.55	10.03
		s.d.	1.54	2.21	1.94
	Juniors	$\bar{X}$	10.13	10.95	10.60
		s.d.	1.71	1.88	1.84
	Seniors	$\bar{X}$	9.78	10.56	10.09
		s.d.	2.06	2.30	2.19
	All levels	$\bar{X}$	9.87	10.54	10.19
		s.d.	1.96	2.07	2.04

Table 5 (Continued)

Scale	Academic level		Males	Females	Total
Esthetics					
	Freshmen	$\bar{X}$	7.97	8.20	8.10
		s.d.	2.90	2.64	2.75
	Sophomores	$\bar{X}$	8.66	8.76	8.70
		s.d.	3.07	3.07	3.04
	Juniors	$\bar{X}$	8.10	8.51	8.33
		s.d.	3.08	3.05	3.05
	Seniors	$\bar{X}$	7.93	8.72	8.24
		s.d.	2.72	2.89	2.81
	All levels	$\bar{X}$	8.06	8.50	8.27
		s.d.	2.86	2.85	2.86
Prestige					
	Freshmen	$\bar{X}$	10.97	11.03	11.00
		s.d.	2.73	2.53	2.61
	Sophomores	$\bar{X}$	10.97	11.03	11.00
		s.d.	2.09	2.35	2.20
	Juniors	$\bar{X}$	10.71	11.17	10.97
		s.d.	3.09	2.38	2.70
	Seniors	$\bar{X}$	10.98	11.15	11.05
		s.d.	2.58	2.44	2.52
	All levels	$\bar{X}$	10.94	11.10	11.02
		s.d.	2.62	2.43	2.53

Table 5 (Continued)

Scale	Academic level		Males	Females	Total
Independence					
	Freshmen	$\bar{X}$	12.30	11.08	11.63
		s.d.	2.53	2.89	2.79
	Sophomores	$\bar{X}$	12.88	11.66	12.30
		s.d.	1.90	2.68	2.36
	Juniors	$\bar{X}$	12.03	12.34	12.21
		s.d.	2.70	2.12	2.37
	Seniors	$\bar{X}$	11.59	11.90	11.71
		s.d.	2.60	2.66	2.62
	All levels	$\bar{X}$	12.01	11.67	11.85
		s.d.	2.53	2.68	2.61
Variety					
	Freshmen	$\bar{X}$	10.90	11.52	11.24
		s.d.	2.34	2.77	2.59
	Sophomores	$\bar{X}$	11.13	11.45	11.28
		s.d.	2.35	2.75	2.53
	Juniors	$\bar{X}$	11.94	12.17	12.07
		s.d.	2.19	2.29	2.24
	Seniors	$\bar{X}$	11.06	12.04	11.45
		s.d.	2.57	2.66	2.64
	All levels	$\bar{X}$	11.14	11.81	11.46
		s.d.	2.44	2.65	2.56

Table 5 (Continued)

Scale	Academic level		Males	Females	Total
Economic Return					
	Freshmen	$\bar{X}$	12.54	12.24	12.38
		s.d.	2.67	2.62	2.64
	Sophomores	$\bar{X}$	12.69	12.00	12.36
		s.d.	2.13	2.89	2.52
	Juniors	$\bar{X}$	11.87	12.07	11.99
		s.d.	3.01	2.51	2.72
	Seniors	$\bar{X}$	12.16	12.35	12.23
		s.d.	2.91	2.54	2.76
	All levels	$\bar{X}$	12.29	12.21	12.25
		s.d.	2.76	2.60	2.68
Altruism					
	Freshmen	$\bar{X}$	11.13	12.59	11.93
		s.d.	2.70	3.00	2.95
	Sophomores	$\bar{X}$	11.72	12.45	12.07
		s.d.	2.73	3.43	3.08
	Juniors	$\bar{X}$	11.97	13.34	12.75
		s.d.	3.21	2.13	2.72
	Seniors	$\bar{X}$	10.57	11.82	11.07
		s.d.	3.05	3.12	3.13
	All levels	$\bar{X}$	11.06	12.46	11.74
		s.d.	2.97	2.99	3.05

Table 5 (Continued)

Scale	Academic level		Males	Females	Total
Intellectual Stimulation					
	Freshmen	$\bar{X}$	11.16	11.59	11.40
		s.d.	2.30	2.19	2.25
	Sophomores	$\bar{X}$	12.38	11.86	12.13
		s.d.	1.68	2.67	2.20
	Juniors	$\bar{X}$	12.19	12.58	12.42
		s.d.	2.12	1.95	2.02
	Seniors	$\bar{X}$	11.58	12.80	12.07
		s.d.	2.73	2.49	2.70
	All levels	$\bar{X}$	11.66	12.21	11.93
		s.d.	2.44	2.37	2.42

Table 6 presents summaries of the factorial analyses of variance for the 15 WVI scales by sex by academic level classification. No significant differences on the basis of academic level were found on the Management, Achievement, Surroundings, Supervisory Relations, Way of Life, Associates, Esthetics, Prestige, Variety, and Economic Return scales. Significant differences were found on 4 of the scale scores. On the Creativity scale juniors had a mean score of 11.64, while the freshman mean was 10.68. Freshmen differed significantly from seniors on the Security scale with means of 12.07 and 10.94 respectively. On the Altruism scale juniors had a mean score of 12.75 and seniors had a mean score of 11.07. On the Intellectual Stimulation scale juniors differed significantly from freshmen with means of 12.42 and 11.40, respectively. Since only 4 of the 15 analyses yielded significant differences, $H_0 3$ is not rejected.

$H_0 4$: There are no differences in the work values of university students on the basis of sex.

The 15 scale mean scores for the WVI ranged from lows of 8.06 for males and 8.50 for females on the Esthetic scale to highs of 13.00 for males and 13.65 for females on the Way of Life scale (Table 5). Table 6 indicates no statistically significant differences on the basis of sex on 9 of the scales: Creativity, Management, Way of Life, Security, Esthetics, Prestige, Economic Return, Intellectual Stimulation, and Independence. Statistically significant differences between males and females did exist on 6 of the values scales. Female mean scores were significantly higher on the Achievement, Surroundings, Supervisory Relations, Associates, Variety, and Altruism scales.

Table 6

Summaries of Sex-by-Academic Level Classification Factorial Analyses of Variance of Work Values Inventory Subscale Scores

Scale/Source	SS	df	MS	F
Creativity				
Sex	10.48	1	10.48	1.68
Academic level	54.51	3	18.17	2.91*
Sex by academic level	10.18	3	3.39	.54
Explained	88.60	7	12.66	2.03
Residual	2761.79	441	6.25	
Total	2850.39	448	6.35	
Management				
Sex	.01	1	.01	.00
Academic level	28.72	3	9.57	1.76
Sex by academic level	5.80	3	1.93	.36
Explained	37.15	7	5.31	.98
Residual	2404.60	441	5.44	
Total	2441.75	448	5.44	

Table 6 (Continued)

Scale/Source	SS	df	MS	F
Achievement				
Sex	98.49	1	98.49	16.18*
Academic level	15.59	3	5.20	.85
Sex by academic level	1.12	3	.37	.06
Explained	149.05	7	21.29	3.50
Residual	2691.39	441	6.09	
Total	2840.44	448	6.33	
Surroundings				
Sex	81.05	1	81.05	14.77*
Academic level	25.76	3	8.59	1.57
Sex by academic level	8.75	3	2.92	.53
Explained	123.60	7	17.66	3.22
Residual	2425.37	441	5.49	
Total	2548.98	448	5.68	

Table 6 (Continued)

Scale/Source	SS	df	MS	F
Supervisory Relations				
Sex	41.25	1	41.25	5.49*
Academic level	27.66	3	9.22	1.23
Sex by academic level	44.58	3	14.86	1.98
Explained	118.57	7	16.94	2.25
Residual	3322.82	441	7.52	
Total	3441.38	448	7.67	
Way of Life				
Sex	17.92	1	17.92	2.15
Academic level	22.61	3	7.54	.90
Sex by academic level	25.55	3	8.52	1.02
Explained	96.43	7	13.78	1.65
Residual	3685.59	441	8.34	
Total	3782.01	448	8.42	

Table 6 (Continued)

Scale/Source	SS	df	MS	F
Security				
Sex	4.65	1	4.65	.57
Academic level	107.76	3	35.92	4.42*
Sex by academic level	7.54	3	2.51	.31
Explained	125.98	7	18.00	2.22
Residual	3588.47	441	8.12	
Total	3714.45	448	8.27	
Associates				
Sex	42.15	1	42.15	10.12*
Academic level	10.80	3	3.60	.86
Sex by academic level	8.00	3	2.67	.64
Explained	65.33	7	9.33	.03
Residual	1841.11	441	4.17	
Total	1906.43	448	4.25	

Table 6 (Continued)

Scale/Source	SS	df	MS	F
Esthetics				
Sex	13.98	1	13.98	1.19
Academic level	16.59	3	5.53	.68
Sex by academic level	9.15	3	3.05	.37
Explained	49.84	7	7.12	.87
Residual	3604.83	441	8.16	
Total	3654.67	448	8.14	
Prestige				
Sex	3.75	1	3.75	.58
Academic level	1.46	3	.49	.08
Sex by academic level	2.16	3	.72	.11
Explained	6.84	7	.98	.15
Residual	2863.84	441	6.48	
Total	2870.68	448	6.39	

Table 6 (Continued)

Scale/Source	SS	df	MS	F
Independence				
Sex	17.68	1	17.68	2.66
Academic level	22.55	3	7.52	1.13
Sex by academic level	66.70	3	22.24	3.34*
Explained	110.21	7	15.75	2.37
Residual	2939.35	441	6.65	
Total	3049.56	448	6.79	
Variety				
Sex	28.78	1	28.78	4.46*
Academic level	37.00	3	12.33	1.91
Sex by academic level	12.08	3	4.03	.62
Explained	100.24	7	14.32	2.22
Residual	2851.98	441	6.45	
Total	2952.23	448	6.56	

Table 6 (Continued)

Scale/Source	SS	df	MS	F
Economic Return				
Sex	1.62	1	1.62	.22
Academic level	8.58	3	2.86	.39
Sex by academic level	13.44	3	4.48	.62
Explained	21.57	7	3.08	.43
Residual	3203.91	441	7.25	
Total	3225.48	448	7.18	
Altruism				
Sex	131.22	1	131.22	15.07*
Academic level	120.56	3	40.19	4.62*
Sex by academic level	5.82	3	1.94	.22
Explained	344.84	7	49.26	5.66
Residual	3848.62	441	8.71	
Total	4193.47	448	9.34	

Table 6 (Continued)

Scale/Source	SS	df	MS	F
Intellectual Stimulation				
Sex	13.79	1	13.79	2.45
Academic level	71.35	3	23.78	4.23*
Sex by academic level	39.17	3	13.06	2.32
Explained	143.70	7	20.53	3.65
Residual	2486.51	441	5.63	
Total	2630.21	448	5.86	

*p <.05

Table 6 indicates that an interaction between sex and academic level occurred on the Independence scale of the WVI. The mean score across academic levels was 11.85 with mean scores for males equal to 12.01 and females equal to 11.67. In general, males from lower academic levels tended to place higher value on the Independence construct than females at the same levels and than seniors who were males.

In summary, significant differences between males and females across academic levels were found to exist on only 6 of the 15 WVI scales. Thus, $H_0 4$ is not rejected.

Relationships Between Career Maturity and Work Values

The relationships among career maturity, work values, and age were determined by intercorrelation matrices of the AVMI total score and the 15 WVI scale scores and age. For this purpose, the Pearson product-moment statistic was used with the level of significance set at .05.

Table 7 offers the correlations between the WVI scale scores and age and the AVMI scores by academic levels for all levels. There follows a description of the findings related to the null hypotheses indicated.

$H_0 5$: There are no relationships between career maturity and work values of university students.

Significant correlations between the AVMI and 12 of the 15 WVI scales were determined for university students. Significant relationships were found to exist between the AVMI and the Creativity, Achievement, Surroundings, Supervisory Relations, Way of Life, Security, Prestige, Independence, Variety, Economic Return, Altruism, and

Table 7

Pearson Product-Moment Correlations Between Work Values Inventory Scale Scores and Age and Adult Vocational Maturity Inventory Scores by Academic Level Classification

Scale	Academic level	WVI-age	WVI-AVMI
Creativity			
	Freshmen	-.03	-.34*
	Sophomores	.01	-.44*
	Juniors	-.09	-.48*
	Seniors	.09	-.25*
	All levels	.06	-.34*
Management			
	Freshmen	-.08	.11
	Sophomores	-.07	-.10*
	Juniors	.09	-.10
	Seniors	.20*	-.12
	All levels	.10*	-.05
Achievement			
	Freshmen	-.06	-.28*
	Sophomores	-.14	-.30
	Juniors	.00	-.54*
	Seniors	-.01	-.38*
	All levels	-.02	-.37*

Table 7 (Continued)

Scale	Academic level	WVI-age	WVI-AVMI
Surroundings			
	Freshmen	.03	-.05
	Sophomores	-.05	.02
	Juniors	.06	-.44*
	Seniors	-.04	-.18*
	All levels	-.00	-.18*
Supervisory Relations			
	Freshmen	-.03	-.11
	Sophomores	.09	-.33
	Juniors	.06	-.40*
	Seniors	-.06	-.17*
	All levels	-.02	-.22*
Way of Life			
	Freshmen	-.11	-.33*
	Sophomores	-.06	-.42*
	Juniors	-.13	-.62*
	Seniors	-.00	-.33*
	All levels	-.08	-.38*

Table 7 (Continued)

Scale	Academic level	WVI-age	WVI-AVMI
Security			
	Freshmen	-.04	-.06
	Sophomores	-.27*	-.04
	Juniors	.03	-.24*
	Seniors	-.03	-.11
	All levels	-.07	-.09*
Associates			
	Freshmen	-.12	-.01
	Sophomores	.03	-.20
	Juniors	-.13	-.03
	Seniors	.04	-.08
	All levels	-.03	-.06
Esthetics			
	Freshmen	.10	-.15
	Sophomores	-.01	.12
	Juniors	-.01	-.04
	Seniors	.13	.09
	All levels	.07	.01

Table 7 (Continued)

Scale	Academic level	WVI-age	WVI-AVMI
Prestige			
	Freshmen	.01	-.01
	Sophomores	-.08	-.11
	Juniors	.67	-.23
	Seniors	.10	-.17*
	All levels	.05	-.13*
Independence			
	Freshmen	-.04	-.27*
	Sophomores	-.14	-.24
	Juniors	.18	-.40*
	Seniors	.07	-.29*
	All levels	.04	-.30*
Variety			
	Freshmen	-.06	-.25*
	Sophomores	-.08	-.14
	Juniors	.03	-.22
	Seniors	.14	-.23*
	All levels	.06	-.23*

Table 7 (Continued)

Scale	Academic level	WVI-age	WVI-AVMI
Economic Return			
	Freshmen	-.04	.05
	Sophomores	.03	-.07
	Juniors	.04	-.29*
	Seniors	.67	-.16*
	All levels	.01	-.12*
Altruism			
	Freshmen	-.11	-.15
	Sophomores	-.20	-.40*
	Juniors	-.06	-.59*
	Seniors	-.00	-.25*
	All levels	-.08	-.28*
Intellectual Stimulation			
	Freshmen	-.06	-.34*
	Sophomores	-.01	-.43*
	Juniors	.08	-.45*
	Seniors	.05	-.45*
	All levels	.06	-.42*

* $p < .05$

Intellectual Stimulation scales. It should be noted that all correlation coefficients were negative in value, indicating an inverse relationship. This is as it should be since lower scores on the AVMI indicate higher levels of career maturity. Thus, $H_0$5 is rejected.

$H_0$6: There are no relationships between career maturity and work values of university students across academic level classifications.

The AVMI was found to correlate significantly with the WVI for freshmen on 6 of the WVI scales. These included the Creativity, Achievement, Way of Life, Independence, Variety, and Intellectual Stimulation scales.

The AVMI was found to correlate significantly with the WVI for sophomores on 5 of the WVI scales. These included the Creativity, Management, Way of Life, Altruism, and Intellectual Stimulation scales.

The AVMI was found to correlate significantly with the WVI for juniors on 10 of the scales. These included the Creativity, Achievement, Surroundings, Supervisory Relations, Way of Life, Security, Independence, Economic Return, Altruism, and Intellectual Stimulation scales.

The AVMI was found to correlate significantly with the WVI for seniors on 11 of the scales. These included the Creativity, Achievement, Surroundings, Supervisory Relations, Way of Life, Prestige, Independence, Variety, Economic Return, Altruism, and Intellectual Stimulation scales. Since out of 60 correlations only 32 were found to be significant, $H_0$6 is not rejected.

Relationships Between Age and Work Values

$H_0$7: There is no relationship between age and work values of university students.

Table 7 indicates that a significant correlation existed between age and only the Management scale of the WVI. Thus, $H_0$7 is not rejected.

$H_0$8: There is no relationship between age and work values of university students on the basis of academic level classification.

Table 7 indicates that a significant correlation existed between age and the WVI Management scale for seniors and the WVI Security scale for sophomores. Thus, $H_0$8 is not rejected.

Relationships Between Age and Career Maturity

$H_0$9: There is no relationship between age and career maturity of university students.

Table 8 presents the Pearson product-moment correlations between Adult Vocational Maturity Inventory scores and age by academic level classification. The results in this table indicate no significant correlation existed between age and the AVMI for all university students. Thus, $H_0$9 is not rejected.

$H_0$10: There is no relationship between age and career maturity of university students on the basis of academic level classification.

Table 8 indicates no significant correlation between age and the AVMI for any academic level classification. Thus, $H_0$10 is not rejected.

A principal-axis factor analysis with varimax rotation was computed to determine the factors underlying the relationships of career maturity and work values. Table 9 presents the factor loadings for the Adult Vocational Maturity Inventory and the Work Values Inventory scales. Four underlying factors were determined by this statistical computation.

The following constructs loaded heavily on Factor I: Adult Vocational Maturity, Creativity, Achievement, Way of Life, Independence,

Table 8

Pearson Product-Moment Correlations Between Adult Vocational Maturity Inventory Scores and Age by Academic Level Classification

Academic level	AVMI-age correlation
Freshmen	.07
Sophomores	-.10
Juniors	-.12
Seniors	.06
All levels	-.01

Table 9

Factor Loadings for Adult Vocational Maturity Inventory and Work Values Inventory Scales Following a Principal-axis Factor Analysis with Varimax Rotation

Scale	Factors			
	I	II	III	IV
AVMI	-.501	-.066	.054	.002
Creativity	.721	.191	.221	.337
Management	.105	.126	.603	.180
Achievement	.616	.564	.160	.045
Surroundings	.288	.595	.266	.050
Supervisory Relations	.360	.659	.117	-.147
Way of Life	.695	.550	.080	-.208
Security	.119	.643	.329	-.195
Associates	.100	.633	.136	.233
Esthetics	.057	.005	.128	.490
Prestige	.222	.403	.590	.127
Independence	.669	.167	.326	-.032
Variety	.556	.246	.251	.074
Economic Return	.308	.555	.471	-.404
Altruism	.478	.529	-.014	.137
Intellectual Stimulation	.719	.265	.251	-.002

Variety, and Intellectual Stimulation. On Factor II, Surroundings, Supervisory Relations, Security, Associates, Economic Return, and Altruism loaded heavily. For Factor III, Management and Prestige loaded heavily, while only Esthetics loaded heavily on Factor IV.

Although four factors emerged, the factor structure is generally unclear. That is, many of the subscales loaded heavily on more than one factor. Thus it appears that there were general constructs underlying the assessments. This is further supported by the pattern of means and standard devision of the various scales since the sample appears to be relatively homogeneous in its values structure.

CHAPTER V

DISCUSSION AND CONCLUSIONS

Introduction

In recent years the concept of career counseling has become more complex because of the numerous factors which have been found to underlie the career decision making process. In order to be effective, the career counselor of today must be concerned with counselee characteristics such as interests, needs, personality factors, values, and career maturity.

The work of developmental theorist, Donald Super, has placed emphasis upon two of these characteristics: work values and career maturity. Information concerning the counselee's level of career maturity assists the counselor in assessing the counselee's readiness to make appropriate vocational decisions. An understanding of the counselee's value orientation assists the counselor in facilitating the direction of these decisions.

The purpose of this study was to examine these two constructs in relation to university students. More specifically, this study sought to examine student differences in career maturity and work values on the basis of sex, academic level, and for all academic levels combined. Additionally, it explored the relationships of career maturity, work values, and age across academic levels and for all academic levels combined.

Summary of the Results

The first hypothesis concerned differences in career maturity of university students on the basis of academic level. Results of the data analysis indicated a trend in the expected direction, i.e., as academic level increased there was a corresponding increase in career maturity level. However none of the differences between academic level means were found to be statistically significant. Therefore $H_0 1$ was not rejected.

The second hypothesis concerned differences in the career maturity of university students on the basis of sex. Females scored significantly lower than males on the AVMI, thus indicating that as a group, college females had a higher level of career maturity than college males. Therefore $H_0 2$ was rejected.

The third hypothesis concerned differences in the work values of university students on the basis of academic level classification. Analyses of the data for 11 of the WVI scales indicated no significant differences across academic levels; however, significant differences were found for 4 of the scales. On the Creativity scale juniors scored significantly higher than freshmen, and on the Altruism scale they scored significantly higher than seniors. Freshmen scored significantly higher than seniors on the Security scale while they scored significantly lower than juniors on the Intellectual Stimulation scale. Since only 4 of the 15 analyses yielded significant differences, $H_0 3$ was not rejected.

The fourth hypothesis was concerned with differences in the work values of university students on the basis of sex. There were no significant differences between males and females on 9 of the scales.

However, female mean scores were significantly higher than males on the Achievement, Surroundings, Supervisory Relations, Associates, Variety, and Altruism scales. Since significant differences were found on only 6 of the 15 scales, $H_0 4$ was not rejected.

The fifth hypothesis concerned relationships between career maturity and work values of university students. When the AVMI was correlated with each of the 15 WVI scales, significant relationships were found to exist on 12 of the work values scales. These included Creativity, Achievement, Surroundings, Supervisory Relations, Way of Life, Security, Prestige, Independence, Variety, Economic Return, Altruism, and Intellectual Stimulation. As a result, $H_0 5$ was rejected.

The sixth hypothesis concerned relationships between career maturity and work values of university students across academic level classifications. There was a significant negative correlation between the AVMI and the WVI for freshmen on 6 of the WVI scales: Creativity, Achievement, Way of Life, Independence, Variety, and Intellectual Stimulation. There was a significant negative correlation between the AVMI and the WVI for sophomores on 5 of the WVI scales: Creativity, Management, Way of Life, Altruism, and Intellectual Stimulation. There was a significant negative correlation between the AVMI and the WVI for juniors on 10 of the WVI scales: Creativity, Achievement, Surroundings, Supervisory Relations, Way of Life, Security, Independence, Economic Return, Altruism, and Intellectual Stimulation. There was a significant negative correlation between the AVMI and the WVI for seniors on 11 of the WVI scales: Creativity, Achievement, Surroundings, Supervisory Relations, Way of Life, Prestige, Independence, Variety, Economic Return, Altruism, and

Intellectual Stimulation. In summary, since approximately half of the correlations were not significant $H_0 6$ was not rejected.

The seventh hypothesis concerned a relationship between age and work values of university students. A significant correlation was found between age and only 1 of the WVI scale scores (Management). As a result, $H_0 7$ was not rejected.

The eighth hypothesis concerned a relationship between age and work values of university students on the basis of academic level classification. A significant negative correlation was found between age and the WVI Management scale for seniors and age and the WVI Security scale for sophomores. Therefore $H_0 8$ was not rejected.

The ninth hypothesis concerned the relationship between age and career maturity of university students. Results indicated no significant correlation between age and career maturity for university students. Thus, $H_0 9$ was not rejected.

The tenth hypothesis concerned the relationship between age and career maturity on the basis of academic level classification. There were no significant correlations between these two constructs for any academic level. Therefore, $H_0 10$ was not rejected.

A research question posed in Chapter 1 concerned the factors underlying the relationships between career maturity and the work value orientations. Results indicated there were 4 such factors with many of the scales loading heavily on more than one factor. Although it appears that there were general constructs underlying the inventories, the results are not clear.

Discussion and Conclusions

The theoretical basis for this study was the career development theory of Donald E. Super (1957). According to this theory career choice is an ongoing process from birth to old age wherein individuals progress from one sequential developmental stage into the next, mastering certain necessary tasks at each stage. According to Super's theory, most university students are in the Exploratory Stage, during which time they are assessing their needs, interests, abilities, opportunities, and values. Attitudinal and cognitive aspects of the career decision making process are developing.

In general, the results of this study indicate that across academic levels university students are a relatively homogeneous group in terms of age, career maturity, and work values. Even though students at one level placed more importance on certain values than students at other levels, few of these differences were found to be statistically significant. Additionally, the results indicate that few relationships exist between age and work values or age and career maturity, both for university students as a group and across academic levels. Significant relationships were found between career maturity and 12 of the WVI scales for all students, on 10 of the scales for juniors and 11 of the scales for seniors.

The one somewhat surprising and provocative finding was the significant difference found between males and females on the career maturity scale. In this study females were found to be significantly more career mature than males. Supposedly, Super's theory (1957) is applicable to both sexes, and previous research related to sex differences in career

maturity support this theory (Loesch, Shub, & Rucker, 1977; Super & Overstreet, 1960; Walls & Gulkus, 1974). The results of this study are in conflict with his theory and previous research.

Richardson (1974) emphasizes that males and females differ in their career development patterns, but the underlying assumption from her viewpoint seems to be that females will not fare as well as males on career maturity inventories. The contrary was true in the case of this study. What might be the possible reasons for these results? Most of the related research on career maturity was done prior to or in the early 1970's. Since that time the "women's movement" has gained momentum, particularly in relation to the world of work. Possibly, as a result of this force, women who are in college now are more certain and knowledgeable about their own personal vocational choice processes.

The results of this study lead to several major conclusions.

1. Further support is established for Super's developmental-sequential-life-stage theory, at least in relation to the Exploratory Stage. That university students compose a relatively homogeneous group was verified by the fact that no significant differences were found across academic levels for either career maturity or work values and no significant relationships were determined between age and either of these constructs. Accordingly, it must be concluded (as the theory suggests) that university students are still in the process of assessing many of the yet uncrystallized factors underlying the career decision making process.
2. In general, there is a relationship between career maturity and work values for university students. This is supported by the significant correlations (12 of 15) found for university students as a group and also by the breakdown across academic levels. Additionally, as career maturity

increases across academic levels students tend to place more importance on a greater number of values. However, these findings should not be overemphasized as results of the factor analysis indicated that (in general) the constellation of measured work values did not break down into specific clusters. Thus, to some extent, the individual scales and the determined relationships are less meaningful.

3. There was an indication that university females were more career mature than males. These results do not correspond with the theory and previous research which suggest similarity rather than difference between the sexes. It must therefore be concluded that relative to the current situation, this aspect of the theory may not be as appropriate as it apparently was when first developed.

Implications

The results of this study have implications for career development theory, counselor training and practice, and for further research.

In general, indications are that the theoretical concept of developmental stages and relative homogeneity within a stage are supported. Additionally, there is support for Super's description of what occurs during the Exploratory Stage in the career development process.

These indications lead to a significant implication for both counselor education and counseling practice. Counselor educators need to place more emphasis upon the developmental stages which individuals experience so that counselor trainees become more familiar with, and have a better understanding of, the process which their particular client groups are experiencing. Accordingly, counselors working specifically with university

students (who are in the Exploratory Stage) need not expect significant differences among those individuals at various levels in the academic process. Additionally, they must understand that factors underlying the career decision making process (in particular, career maturity and work values) are often still not yet crystallized. Therefore it becomes necessary for counselors to facilitate the clarification and crystallization of these factors as they work with both individuals and groups.

There are several important implications for further research. It is important that similar research be done with populations representative of the developmental stages both pre and post the Exploratory Stage. This research would offer additional credence or question as to the developmental theory.

This study should be replicated using other career maturity and work values inventories in order to further support or repute the patterns found in this study. In particular, this is suggested because the AVMI measures only attitudinal factors in the career maturity construct. Research which offers information relative to the cognitive aspects of this construct is needed.

Certainly, further research relative to differences in career maturity between males and females is indicated. Individual factors in the career maturity construct need to be assessed on the basis of sex so as to determine the implications for counselor education and counselor intervention.

In summary, the results of this study have important implications for all those interested in understanding and facilitating individuals in their career decision making processes.

APPENDIX A

Dear Students:

The purpose of this study is to gather some information which will help counselors and student personnel workers understand more about what college students think and how they feel about choosing an occupation or a career. The more information we have about the career choice process, the better we will be able to assist college students when they need help in choosing a career.

Please understand that your participation is completely voluntary and that all individual scores will be kept completely confidential. If you choose to participate, please sign the human subject's release form below.

If you are interested in the results of the study and your own individual scores, please indicate where appropriate below and write in your name, social security number and permanent mailing address. This information will be mailed to you after the study is completed.

Thank you very much for your participation.

Sincerely,

Beverly B. Crane
Doctoral Candidate,
Dept. of Counselor Education,
University of Florida

RELEASE FORM:

I understand that participation in this study is completely voluntary and my decision to participate and my personal scores will have no effect upon my grades or academic standing.

_____
your signature

REQUEST FOR RESULTS OF THE STUDY:

I am interested in the results of this study and wish to know my own individual scores. Please mail these to me at the permanent mailing address indicated below.

_____
Name Soc. Sec. No. Permanent mailing address

APPENDIX B

INTRODUCTION OF THE RESEARCH AND ADMINISTRATION INSTRUCTIONS

Introduction

There is very little information available in the literature in relation to university students and the way they think and how they feel about factors involved in making a career choice. You are being requested to participate in a study which will explore the opinions and attitudes about this career choice process and the work values of university students. This study will contain a representative sample from all four academic level classifications and from at least five colleges. Thus, information gained from it will hopefully be helpful to counselors as they attempt to aid students in the important activity of choosing a vocation or career.

You might ask, "What benefit does my participation offer me personally?" This is a fair question. For participating in the study, I wish to offer you personal feedback on both the general findings of the research and your own individual scores, with an interpretation of these. If you are interested in this information, please indicate your name and a permanent mailing address in the space provided at the bottom of the letter which I will now distribute. If you do not wish to have your scores reported to you, that's fine; simply leave the space blank.

I now ask that you take time to read the cover letter, sign the human subjects' release form and indicate if you wish feedback on your scores. Then I will give you information and instructions about use of the answer sheet and inventories.

Administration Instructions

(Each subject will be provided with a General Purpose Trans-Optic-Scan Answer Sheet, copies of the Work Values Inventory, the Adult Vocational Maturity Inventory, and instructions for answer sheet coding of demographic data. Black, soft-leaded pencils will be provided those needing them.)

For the purpose of identification, and so that I may report your individual scores to those of you who are interested, please print your name and social security number at the top of page one on the General Purpose Answer Sheet. Now turn to the back of the answer sheet and fill in the following information:

1. Name - fill in the blocks at the top and then darken the circles corresponding to each letter in your name

2. Sex - darken the appropriate circle, male or female

3. Birthdate - darken the appropriate year and month

4. Grade or Education - darken the appropriate circle:

   13 - if freshman
   14 - if sophomore
   15 - if junior
   16 - if senior
   17 - if graduate student or other classification

5. Social Security Number - fill in the blocks and darken the appropriate circles

6. Special Codes -

   A. Column one is to identify your college
      1 - if Arts and Sciences
      2 - if Business Administration
      3 - if Education
      4 - If Journalism
      5 - if University College
      6 - if Some other college

   B. Column six, or the last column, is for your ethnic background:
      1 - if Caucasian
      2 - if Afro-American
      3 - if Hispanic
      4 - if Other.

You are to record all of your responses to the items on this answer sheet. Please do not write on the inventories as these will be used for others who are participating in the study. There are no right or wrong answers. It is very important that you respond to every item. Usually it is best to choose the first response that comes to mind. Do not try to read anything into the items, nor spend too much time on any particular one. You should be able to complete the set in 35 minutes or less.

Items 1-45 are related to those values which people consider important in their work. Items 46-85 are statements about work which require your opinion. Each section is preceeded by instructions and these are self-explanatory. I will collect the inventories and answer sheets as soon as all have completed them. Are there any questions? Thank you, once again, for your participation. Now you may proceed.

APPENDIX C

AVMI OPINION SURVEY

Directions: Please read each of the following statements about choosing a job and decide the extent to which you agree or disagree. Darken the circle on the answer sheet which corresponds to the number which most nearly represents your opinion. The numbers represent the following opinions:

5 - if you strongly agree with the statement

4 - if you agree, but not strongly

3 - if you are neutral or undecided

2 - if you disagree, but not strongly

1 - if you strongly disagree with the statement

Work rapidly and record your first impression. Remember, the only correct answer is the one which most nearly represents your attitude toward the vocational statement.

PLEASE BEGIN WITH ITEM 46 ON THE ANSWER SHEET

46. You have to know what you are good at, and what you are poor at, before you can choose an occupation.

47. Once a person makes an occupational choice he can't make another one.

48. A person can do anything he wants as long as he tries hard.

49. Your occupation is important because it determines how much you can earn.

50. A consideration of what you are good at is more important than what you like in choosing an occupation.

51. Parents probably know better than anybody which occupation a person should enter.

52. Work is worthwhile mainly because it lets you buy things you want.

53. Work is drudgery.

54. Why should a person try to decide upon an occupation when the future is so uncertain.

55. It's probably just as easy to be successful in one occupation as it is in another.

56. By the time a person is 15, he should have his mind pretty well made up about the occupation he intends to enter.

57. Sometimes you can't get into the occupation you want to enter.

58. You can't go very far wrong by following your parent's advice about which occupation to enter.

59. Working an occupation is much like going to school.

60. The best thing to do is to try out several occupations, and then choose the one you like best.

61. There is only one occupation for each individual.

62. Whether you are interested in an occupation is not as important as whether you can do the work.

63. You get into an occupation mostly by chance.

64. It's who you know, not what you know, that's important in an occupation.

65. A person should choose an occupation in which he can someday become famous.

66. If someone has some doubts about what he wants to do, he should ask his parents or friends for advice and suggestions.

67. Choose an occupation which allows you to do what you believe in.

68. It doesn't matter which occupation a person chooses as long as it pays well.

69. As far as choosing an occupation is concerned, something always comes along sooner or later.

70. Why worry about choosing an occupation when a person doesn't have anything to say about it anyway.

71. I really haven't found any career that has much appeal to me.

72. I have little or no idea of what working will be like.

73. As long as I can remember I've known what I wanted to do.

74. I can't understand how some people can be so sure about what they want to do.

75. My ideal occupation will have to be one which has short hours and nice working conditions.

76. I want an occupation which pays good money.

77. I often wonder how successful I will be in my occupation.

78. I know very little about the requirements of occupations.

79. I spend a lot of time wishing that I could do work that I know I cannot ever possibly do.

80. I guess everybody goes to work sooner or later, but I don't look forward to it.

81. I often daydream about what I want to be, but I really don't have an occupational choice.

82. The greatest appeal of an occupation to me is the opportunity it provides for getting ahead.

83. Everyone has told me something different, until now I don't know which occupation to choose.

84. I seldom think about the occupation I wish to enter.

85. I don't think much about the kind of job I want.

APPENDIX D

INTERPRETATION OF WORK VALUES INVENTORY SCALES*

1. Altruism
   work which allows one to contribute to the welfare of others; this scale assesses social service interests and values

2. Esthetic
   something inherent in work which allows one to contribute beauty to the world and to make beautiful things; related to artistic interests

3. Creativity
   associated with work which allows one to develop new ideas, invent new things, or design new products; related to scientific and artistic interests

4. Intellectual Stimulation
   associated with work which allows for learning how and why things work, and for independent thinking; this scale assesses a value which characterizes persons with scientific and professional interests of an abstract nature, a desire to use one's intellectual abilities and for exercising one's judgement

5. Achievement
   associated with work which affords one a sense of accomplishment in doing a good job; assesses a task orientation, a liking for work with tangible, visible outcomes

6. Independence
   associated with work which allows an individual to work in his/her own way, as slowly or fast as he/she desires; reflects a pleasure orientation

7. Prestige
   associated with work which evokes respect and gives one standing in the eyes of others; assesses a desire for the respect of others rather than for status or power

8. Management
   associated with work which allows an individual to plan and lay out work for others to do; frequently characterizes persons interested in contact occupations, and persons in jobs which require that they plan their own work even if not that of others

9. Economic Returns
   associated with work which is well paying, which makes it possible for one to have the things he/she wants; often referred to as materialistic or the attaching of importance to earnings or tangible things

10. Security
    associated with work which affords one the certainty of a job even in difficult times; somewhat related to Economic Returns; reflects a degree of interest in obtaining the rewards of work

11. Surroundings
    associated with work which is done under comfortable and pleasant conditions--not too cold or hot, noisy, dirty, etc.; the material environment in which one works; tends to be important to individuals whose interests are more in the concomitants of work rather than in the work itself

12. Supervisory Relations
    associated with work which is done under a supervisor who is perceived as fair and with whom one is able to get along

13. Associates
    associated with work which allows for contact with fellow workers whom the individual likes; considered important by persons in lower-skilled occupations and office workers more than by persons in more demanding fields

14. Way of Life
    associated with work which permits an individual to live the kind of life style he/she chooses and to be the type of individual he/she wants to be

15. Variety
    associated with work which affords an individual the opportunity to do different types of jobs; a pleasure, rather than task orientation

*These interpretations are paraphrased from Super's Work Values Inventory Manual (1970, pp. 8-10).

APPENDIX E

FREQUENCY OF RESPONDENTS BROKEN-DOWN BY COLLEGE BY SEX

College	Sex		Total
	Males	Females	
Arts and Sciences	31	24	55
Business Administration	64	23	87
Education	6	9	15
Journalism	23	31	54
University College	91	104	195
Other	17	25	42

REFERENCES

Allport, G. W., Vernon, P. E., & Lindzey, G. A. A study of values (Rev. ed.). Boston: Houghton Mifflin, 1960.

Astin, A. W., & Panos, R. J. The educational and vocational development of college students. Washington: American Council on Education, 1969.

Baldwin, A. L. Theories of child development. New York: Wiley, 1967.

Blai, B. An occupational study of job satisfaction and need satisfaction. Journal of Experimental Education, 1964, 32, 383-388.

Blai, B. Job satisfaction and work values of women. Journal of the National Association for Women Deans, Administrators and Counselors, 1974, 37, 151-157.

Borgen, F. H., Weiss, D. J., Tinsley, E. A., Dawis, R. V., & Lofquist, L. H. The measurement of occupational reinforcer patterns. University of Minnesota: Work Adjustment for Project Industrial Relations Center, 1968.

Buehler, C. [Der menschliche Lebenslav als psychologiches Problem], Leipzig: Hirgel, 1933. In D. Super, The psychology of careers. New York: Harper & Brothers, 1957.

Centers, R. Motivational aspects of occupational stratification. Journal of Social Psychology, 1948, 28, 187-217.

Crites, J. O. A model for the measurement of vocational maturity. Journal of Counseling Psychology, 1961, 9, 255-260.

Crites, J. O. Measurement of vocational maturity in adolescence: 1. Attitude Test of the Vocational Development Inventory. Psychological Monographs, 1965, 79 (2, Whole No. 595).

Crites, J. O. The maturity of vocational attitudes in adolescents. Washington, D. C.: American Personnel and Guidance Association, 1971.

Crites, J. O. The Career Maturity Inventory. In D. E. Super (Ed.), Measuring vocational maturity for counseling and evaluation. Washington, D. C.: National Vocational Guidance Association Monograph, 1974.

Darley, J. G., & Hagenah, T. Vocational interest measurement--Theory and practice. Minneapolis: University of Minnesota Press, 1955.

Davis, D. A., Hagan, N., & Strauf, J. Occupational choice of twelve year olds. Personnel and Guidance Journal, 1962, 40, 628-629.

Douvan, E., & Adelson, J. The adolescent experience. New York: Wiley & Sons, 1966.

Forrest, D. J., & Thompson, A. S. The Career Development Inventory. In D. E. Super (Ed.), Measuring vocational maturity for counseling and evaluation. Washington, D. C.: National Vocational Guidance Association Monograph, 1974.

French, J. W. Work Values Inventory. Journal of Educational Measurement, 1971, 8, 53-54.

Fretz, B. R. Occupational values as discriminants of pre-professional student groups. Journal of Vocational Behavior, 1972, 2, 233-237.

Fryer, D. The measurement of interests in relation to human adjustment. New York: Holt, 1931.

Ginzberg, E. The development of a developmental theory of occupational choice. In W. H. Van Hoose & J. Pietrofesa (Eds.), Guidance in the twentieth century. Boston: Houghton Mifflin, 1970.

Ginzberg, E., Ginzberg, S. W., Axelrad, S., & Herma, J. L. Occupational choice: An approach to a general theory. New York: Columbia University Press, 1951.

Gribbons, W. D., & Lohnes, P. R. Shifts in adolescents' vocational values. Personnel and Guidance Journal, 1965, 44, 248-252.

Gribbons, W. D., & Lohnes, P. R. Emerging careers. New York: Teachers College Press, 1968.

Gribbons, W. D., & Lohnes, P. R. Career development from age 13 to 25. Washington, D. C. : U. S. Department of Health, Education and Welfare, Office of Education Bureau of Research, 1969.

Hales, L. W., & Fenner, B. Work values of 5th, 8th, and 11th grade subjects. Vocational Guidance Quarterly, 1972, 20, 199-203.

Hammond, M. Occupational Attitude Rating Scales. Personnel and Guidance Journal, 1954, 32, 470-474.

Hammond, M. Motives related to vocational choices of college freshmen. Journal of Counseling Psychology, 1956, 3, 257-261.

Hana, A. M. Work values in relation to age, intelligence, socio-economic level and occupational interest level. Doctoral dissertation, Teachers College, Columbia University, 1954.

Harman, R. L. Students who lack vocational identity. Vocational Guidance Quarterly, 1973, 21, 169-173.

Harmon, L. W. Problems in measuring vocational maturity: A counseling perspective. In D. E. Super (Ed.), Measuring vocational maturity for counseling and evaluation. Washington, D. C.: National Vocational Guidance Association Monograph , 1974.

Herzberg, F. In F. Herzberg, G. Mausner, & P. D. Snyderman. The motivation to work. New York: Wiley, 1959.

Holland, J. L. Making vocational choices: A theory of careers. New Jersey: Prentice-Hall, 1973.

Issac, S., & Michael, W. B. Handbook in research and evaluation. San Diego: Edits, 1971.

Ivey, A. E. Interests and work values. Vocational Guidance Quarterly, 1963, 11, 121-124.

Jordaan, J. P. The use of vocational maturity instruments in counseling. In D. E. Super (Ed.), Measuring vocational maturity for counseling and evaluation. Washington, D. C.: National Vocational Guidance Association Monograph, 1974.

Jordaan, J. P., & Heyde, M. B. Vocational development: The high school years. Book in preparation, 1974.

Katz, M. R. Interests and values: A comment. Journal of Counseling Psychology, 1969, 16, 460-462.

Keith, E. M., Jr. The work values and career maturity of community college transfer and native students. Doctoral dissertation, University of Florida, 1976.

Kinnane, J. F., & Pable, M. W. Family background and work value orientation. Journal of Counseling Psychology, 1962, 9, 320-325.

Loesch, L. C., Shub, P. A., & Rucker, B. B. A field test and factor analysis of the Adult Vocational Maturity Inventory. Unpublished manuscript, University of Florida, 1977.

Miller, M. F. Relationship of vocational maturity to work values. Journal of Vocational Behavior, 1974, 5, 367-371.

Morris, C. Varieties of human value. University of Chicago Press, 1956.

Myers, R. A. Career development in the college years. Journal of College Placement, 1972, 32, (3), 59-63.

O'Hara, R. P., & Tiedeman, D. V. Vocational self-concept in adolescence. Journal of Counseling Psychology, 1959, 6, 292-301.

Osipow, S. H. Theories of career development. New York: Appleton-Century-Crofts, 1968.

Richardson, M. S. Vocational maturity in counseling girls and young women. In D. E. Super (Ed.), Measuring vocational maturity for counseling and evaluation. Washington, D. C.: National Vocational Guidance Association Monograph, 1974.

Roe, A. Early determinants of vocational choice. Journal of Counseling Psychology, 1957, 4, 212-217.

Rokeach, M. Beliefs, attitudes, and values. Chicago: Jossey-Bass, 1968.

Rosenberg, M. Occupations and values. Glencoe, Illinois: The Free Press, 1957.

Schaffer, R. H. Job satisfaction as related to need satisfaction in work. Psychological Monographs, 1953, 67 (1, Whole No. 364).

Sheppard, D. E. The measurement of vocational maturity in adults. Journal of Vocational Behavior, 1971, 1, 399-406.

Singer, S. L., & Stefflre, B. Age differences in job values and desires. Journal of Counseling Psychology, 1954, 2, 89-91. (a)

Singer, S. L., & Stefflre, B. Sex differences in job values and desires. Personnel and Guidance Journal, 1954, 32, 483-484. (b)

Smith, E. D., & Herr, E. L. Sex differences in the maturation of vocational attitude among adolescents. Vocational Guidance Quarterly, 1972, 20, 177-182.

Strong, E. L., & Campbell, D. P. Manual, the Strong Vocational Interest Blank. Stanford: Stanford University Press, 1966.

Super, D. E. A theory of vocational development. American Psychologist, 1953, 8, 185-190.

Super, D. E. The dimensions and measurement of vocational maturity. Teachers College Record, 1955, 57, 151-163.

Super, D. E. The psychology of careers. New York: Harper & Brothers, 1957.

Super, D. E. Vocational development theory in 1988: How will it come about? Counseling Psychologist, 1969, 1, 9-14. (a)

Super, D. E. Vocational development theory: Persons, positions and processes. Counseling Psychologist, 1969, 1, 2-9. (b)

Super, D. E. Work Values Inventory Manual. Boston: Houghton Mifflin, 1970.

Super, D. E. (Ed.), Measuring vocational maturity for counseling and evaluation. Washington, D. C.: The National Vocational Guidance Association Monograph, 1974.

Super, D. E., Crites, J. O., Hummel, R. C., Moser, H., Overstreet, P. L., & Warnath, C. F. Vocational development: A framework for research. New York: Teachers College Press, 1957.

Super, D. E., & Forrest, D. J. Career Development Inventory manual, Form 1, (preliminary manual for research and field trial). Unpublished manuscript, New York: Teachers College, Columbia University, 1972.

Super, D. E., Kowalski, R., & Gotkin, E. Floundering and trial after high school. Unpublished manuscript, New York: Teachers College, Columbia University, 1967.

Super, D. E., Overstreet, P. L. The vocational maturity of ninth grade boys. New York: Teachers College, Columbia University, Bureau of Publications, 1960.

Super, D. E., Starishevsky, R., Matlin, N., & Jordaan, J. P. Career development: Self-concept theory. New York: College Entrance Examination Board, 1963.

Thompson, O. E. Occupational values of high school students. Personnel and Guidance Journal, 1966, 44, 850-853.

Thorndike, R. M., Weiss, D. J., & Dawis, R. V. Multiple relationships between measured vocational interests and measured vocational needs. Proceedings, 75th Annual Convention, American Psychological Association, 1967, 351-352.

Tiedeman, D. V. Decision and vocational development: A paradigm and its implications. Personnel and Guidance Journal, 1961, 40, 15-21.

Tiedeman, D. V. Review of the Work Values Inventory. In O. K. Buros (Ed.), The seventh mental measurements yearbook, New Jersey: The Gryphon Press, 1972, 1479-1481.

Tiedeman, D. V., & O'Hara, R. P. Career development: Choice and adjustment. New York: College Entrance Examination Board, 1963.

Tolbert, E. L. Counseling for career development. Boston: Houghton Mifflin, 1974.

Wagman, M. Sex and age differences in occupational values. Personnel and Guidance Journal, 1965, 44, 258-262.

Wagman, M. Perceived similarities in occupational value structure. Vocational Guidance Quarterly, 1968, 16, 275-281.

Walls, R. T., & Gulkus, S. P. Reinforcers, values, and vocational maturity in adults. Journal of Vocational Behavior, 1974, 4, 325-332.

Weiss, D. J., Dawis, R. V., England, G. W., & Lofquist, L. H. Construct validation studies of the Minnesota Importance Questionnaire, Minnesota Studies in Vocational Rehabilitation, XVII. Minneapolis: The Industrial Relations Center, University of Minnesota, 1964.

Werner, H. Comparative psychology of mental development (Rev. ed.). Chicago: Follett, 1948.

Westbrook, B. W., & Mastie, M. M. The Cognitive Vocational Maturity Inventory. In D. E. Super (Ed.), Measuring vocational maturity for counseling and evaluation. Washington, D. C.: National Vocational Guidance Association Monograph, 1974.

Westbrook, B. W., & Parry-Hill, J. W., Jr. The measurement of cognitive vocational maturity. Journal of Vocational Behavior, 1973, 3, 239-252.

Wolfe, H. B. Women in the world of work. New York: Division of Research, The State Education Department, 1969.

Zytowski, D. G. The concept of work values. Vocational Guidance Quarterly, 1970, 18, 176-186.

BIOGRAPHICAL SKETCH

It is really of little significance as to when and where Beverly Brown Crane descended upon this Earth. The important thing is that she descended. The world would have to wait but a few years until this individual began to make her impact.

Interesting experiences, challenge, fun, and excitement have been the story of her life--ever since kindergarten when the little boy sitting across from her "got fresh under the table." Although not always "the" brightest kid in the class, Bev was analagous to cream (before the days of homogenized milk) and during all of her public school years life was very good to her (as she was to it). There were service club meetings, dances, football games, Glee Club presentations and Mixed Chorus trips. Once in awhile time was found for classes and homework.

During all of these marvelous years of puberty Bev lived in Miami (Florida, of course). For years she had been a long-distance Gator fan, so it was of no surprise when, upon finishing high school, she found herself a bonafide Gator freshman. This was a big year--it must have been--because Bev became an authority on every subject (her parents especially experienced this, much to their chagrin). As a matter of fact, at the end of her freshman year, she was more knowledgeable and wise than she'd even been before or has ever been since (or ever will be, for that matter).

Although she came to the University of Florida for her BA degree, the emphasis back then was very much on a MRS degree. As usual, Bev thought she could have the best of both worlds. Knowing the BA degree wouldn't run away, she opted for the MRS after her freshman year.

Eight years later, with one child and a second "on the way," Bev finally received the BAE in Elementary Education. Of course, by this time, her goals had changed and she felt certain she never wanted to teach at the elementary level. Two years after graduation found this gal with a daughter (Cheryl, age 6) and two sons (Keith, age 2 and Marc, age 1 month). As a result, graduate work was postponed until all three were in public school.

During the interim period between undergraduate and graduate work, and while "mothering," Bev became involved in some community activities. This involvement led to all kinds of exciting adventures, e.g., persuading the city and county commissions to support projects, shaming the Alachua County Medical Society into donating time to a german measles immunization program, mobilizing community agencies in support of drug education and communication programs. It was an exhilarating and rewarding period in her life.

The children grew (interestingly enough) and in 1973 when they were all in public school, Bev entered graduate school. From 1973 to the present has been the most exciting, stimulating, challenging, and sometimes frustrating and trying period of her life. Not only has she obtained her master's and specialist degrees, a divorce decree (which she very much wanted), she has made an adjustment to single life and single parenthood. Presently the Ph.D. in Counselor Education is in sight and so is a position as Assistant Professor of Psychology and Counseling

Psychologist at the University of Houston at Clear Lake City, Texas. The state of Texas will never be the same. Look out Texas, here she comes--to begin a brand new and exciting chapter.

AMEN

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Larry C. Loesch, Chairman
Assistant Professor of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Harold C. Riker
Professor of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Harry A. Grater
Professor of Psychology

This dissertation was submitted to the Graduate Faculty of the Department of Counselor Education in the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August 1977

Dean, Graduate School

UNIVERSITY OF FLORIDA
3 1262 08553 9632